SMALL
CROWN 8vo. END PAPERS.

ROWLANDS' ODONTO

Is the purest and most fragrant dentifrice ever made; it whitens the teeth, prevents decay, and gives a pleasing fragrance to the breath, and the fact of its containing no acid or mineral ingredients especially adapts it for the teeth of children. All dentists will allow that neither washes or pastes can possibly be as efficacious for polishing the teeth and keeping them sound and white as a pure and non-gritty tooth powder; such Rowlands' Odonto [illegible] always proved itself to be.

ROWL[illegible]S' MACASSAR OIL

[illegible] wn for the last 80 years, as the best and safest [illegible] beautifier of the hair; it contains no lead or [illegible] lients, and is especially adapted for the hair [illegible] sold in usual four sizes. Ask any Chemist, [illegible] air dresser for Rowlands' Articles.

AN ENTIRELY NEW SERIES OF SIXPENNY NOVELS.

In demy 8vo., handsome picture wrappers,

WARD AND LOCK'S

SIXPENNY STANDARD NOVELS.

Messrs. WARD, LOCK & CO. *beg to call the attention of the Public to their* NEW SERIES OF CHEAP NOVELS, *composed in clear, readable type, well printed on good paper, and attractively bound in picture wrappers.*

By SIR WALTER SCOTT.

Waverley.
Kenilworth.
Ivanhoe.
The Antiquary.

By LYTTON BULWER.

Paul Clifford.
Last Days of Pompeii.
Pelham.
Eugene Aram.

By CAPTAIN MARRYAT.

Midshipman Easy.
Japhet in Search of a Father.
Jacob Faithful.
Peter Simple.

BEETON'S ALL-ABOUT IT BOOKS.

Crown 8vo. cloth gilt, price 2s. 6d. each.

1. **All About Cookery.** A Collection of Practical Recipes, arranged in Alphabetical Order, and fully Illustrated.
2. **All About Everything.** A Domestic Encyclopædia, consisting of Practical Recipes and Every-Day Information, fully Illustrated.
3. **All About Gardening.** A Popular Dictionary of Practical Gardening, containing full and practical Instructions in the different branches of Horticultural Science. Illustrated.
4. **All About Country Life.** Being a Dictionary of Rural Avocations and of Knowledge necessary to the Farm, Stable, Stockyard, and a Gentleman's Out-of-Town Residence.
5. **All About Hard Words.** Being a Dictionary of Every-Day Difficulties in Reading, Writing, and Speaking.
6. **All About Book-keeping.** A Comprehensive Treatise, exemplified in Complete Sets of Account Books, arranged to form a course of practice in Single and Double Entry.
7. **All About Etiquette.** A Manual of Politeness and Good Manners, for Ladies, Gentlemen, and Families. Illustrated.
8. **The Mother's Home Book.** Containing Practical Instructions for the Preservation of her own and her Infant's Health. Fully Illustrated.

London: WARD, LOCK & Co., Salisbury Square, E.C.

CADBURY'S *PURE, SOLUBLE, REFRESHING* COCOA ESSENCE

The reason why so many are unable to take Cocoa is that the varieties commonly sold are mixed with Starch, under the plea of rendering them soluble; while really making them *thick*, *heavy*, and *indigestible*. This may be easily detected, *for if Cocoa thickens in the cup, it proves the addition of Starch.*

There is nothing more nourishing and warming in cold weather than a cup of really good COCOA, but the difficulty has been to obtain it pure. This may be secured at a cost of One Halfpenny for a large breakfast-cup, by using CADBURY'S COCOA ESSENCE, which goes three times as far as these adulterated and starchy compounds, the smallest packet making fourteen breakfast-cups of strong Cocoa.

MAKERS TO THE QUEEN.

ROWLANDS' ODONTO

Is the purest and most fragrant dentifrice ever made; it whitens the teeth, prevents decay, and gives a pleasing fragrance to the breath, and the fact of its containing no acid or mineral ingredients especially adapts it for the teeth of children. All dentists will allow that neither washes or pastes can possibly be as efficacious for polishing the teeth and keeping them sound and [illegible] as a pure and non-gritty tooth powder; such Rowlands' Odonto [illegible] proved itself to be.

[illegible] S' MACASSAR OIL

[illegible] known for the last 80 years as the best and safest [illegible] beautifier of the hair; it contains no lead or [illegible] ingredients, and is especially adapted for the hair [illegible] sold in usual four sizes. Ask any Chemist, [illegible] or hairdresser for Rowlands' Articles.

AN ENTIRELY NEW SERIES OF SIXPENNY NOVELS.

In demy 8vo., handsome picture wrappers,

WARD AND LOCK'S

SIXPENNY STANDARD NOVELS.

Messrs. Ward, Lock & Co. *beg to call the attention of the Public to their* New Series of Cheap Novels, *composed in clear, readable type, well printed on good paper, and attractively bound in picture wrappers.*

By SIR WALTER SCOTT.

Waverley.
Kenilworth.
Ivanhoe.
The Antiquary.

By LYTTON BULWER.

Paul Clifford.
Last Days of Pompeii.
Pelham.
Eugene Aram.

By CAPTAIN MARRYAT.

Midshipman Easy.
Japhet in Search of a Father.
Jacob Faithful.
Peter Simple.

London: WARD, LOCK & Co., Salisbury Square, E.C.

BEETON'S ALL-ABOUT IT BOOKS.

Crown 8vo. cloth gilt, price 2s. 6d. each.

1. **All About Cookery.** A Collection of Practical Recipes, arranged in Alphabetical Order, and fully Illustrated.
2. **All About Everything.** A Domestic Encyclopædia, consisting of Practical Recipes and Every-Day Information, fully Illustrated.
3. **All About Gardening.** A Popular Dictionary of Practical Gardening, containing full and practical Instructions in the different branches of Horticultural Science. Illustrated.
4. **All About Country Life.** Being a Dictionary of Rural Avocations and of Knowledge necessary to the Farm, Stable, Stock-yard, and a Gentleman's Out-of-Town Residence.
5. **All About Hard Words.** Being a Dictionary of Every-Day Difficulties in Reading, Writing, and Speaking.
6. **All About Book-keeping.** A Comprehensive Treatise, exemplified in Complete Sets of Account Books, arranged to form a course of practice in Single and Double Entry.
7. **All About Etiquette.** A Manual of Politeness and Good Manners, for Ladies, Gentlemen, and Families. Illustrated.
8. **The Mother's Home Book.** Containing Practical Instructions for the Preservation of her own and her Infant's Health. Fully Illustrated.

London: WARD, LOCK & Co., Salisbury Square, E.C.

CADBURY'S *PURE, SOLUBLE, REFRESHING* COCOA ESSENCE

The reason why so many are unable to take Cocoa is that the varieties commonly sold are mixed with Starch, under the plea of rendering them soluble; while really making them *thick*, *heavy*, and *indigestible*. This may be easily detected, *for if Cocoa thickens in the cup, it proves the addition of Starch.*

There is nothing more nourishing and warming in cold weather than a cup of really good COCOA, but the difficulty has been to obtain it pure. This may be secured at a cost of One Halfpenny for a large breakfast-cup, by using CADBURY'S COCOA ESSENCE, which goes three times as far as these adulterated and starchy compounds, the smallest packet making fourteen breakfast-cups of strong Cocoa.

MAKERS TO THE QUEEN.

REFERENCE BOOKS FOR THE PEOPLE.

BEETON'S NATIONAL REFERENCE BOOKS,

FOR THE PEOPLE OF GREAT BRITAIN AND IRELAND.

**** In an age of great competition and little leisure the value of Time is tolerably well understood. Men wanting facts like to get at them with as little expenditure as possible of money or minutes.* BEETON'S NATIONAL REFERENCE BOOKS *have been conceived and carried out in the belief that a set of Cheap and Handy Volumes in Biography, Geography, History (Sacred and Profane), Science, and Business, would be thoroughly welcome, because they would quickly answer many a question. In every case the type will be found clear and plain.*

STRONGLY BOUND IN CLOTH, PRICE ONE SHILLING EACH.

(Those marked thus * can be had cloth gilt, price 1*s*. 6*d*.)

1. ***Beeton's British Gazetteer:** A Topographical and Historical Guide to the United Kingdom.
2. **Beeton's British Biography:** From the Earliest Times to the Accession of George III.
3. **Beeton's Modern Men and Women:** A British Biography, from the Accession of George III. to the Present Time.
4. ***Beeton's Bible Dictionary.** A Cyclopædia of the Geography, Biography, Narratives, and Truths of Scripture.
5. ***Beeton's Classical Dictionary:** A Cyclopædia of Greek and Roman Biography, Geography, Mythology, and Antiquities.
6. ***Beeton's Medical Dictionary.** A Guide for every Family, defining, with perfect plainness, the Symptoms and Treatment of all Ailments, Illnesses, and Diseases.
7. **Beeton's Date Book.** A British Chronology from the Earliest Records to the Present Day.
8. **Beeton's Dictionary of Commerce.** Containing Explanations of the principal Terms used in, and modes of transacting Business at Home and Abroad.
9. **Beeton's Modern European Celebrities.** A Biography of Continental Men and Women of Note who have lived during the last Hundred Years, or are now living.

Beeton's Guide Book to the Stock Exchange and Money Market. With Hints to Investors and the Chances of Speculators. Entirely New Edition, post 8vo, linen boards, 1*s*.

Beeton's Investing Money with Safety and Profit. New and Revised Edition. Post 8vo, linen covers, 1*s*.

Beeton's Ready Reckoner. With New Tables, and much Information never before collected. Post 8vo, strong cloth, 1*s*.

Webster's Sixpenny Ready Reckoner. 256 pp., cloth, 6*d*.

Beeton's Complete Letter Writer, for Ladies and Gentlemen. Post 8vo, strong cloth, price 1*s*.

Beeton's Complete Letter Writer for Ladies. In linen covers, 6*d*.

Beeton's Complete Letter Writer for Gentlemen. Price 6*d*.

The New Letter Writer for Lovers. In linen covers, price 6*d*.

Webster's Shilling Book-keeping. A Comprehensive Guide, comprising a Course of Practice in Single and Double Entry. Post 8vo, cloth, 1*s*.

London: WARD, LOCK & CO., Salisbury Square, E.C.

BEETON'S

DICTIONARY OF COMMERCE.

A Book of Reference.

CONTAINING:

AN ACCOUNT OF THE NATURAL PRODUCTIONS AND MANUFACTURES DEALT WITH IN THE COMMERCIAL WORLD; EXPLANATIONS OF THE MODES OF TRANSACTING BUSINESS, WITH THE PRINCIPAL TERMS USED IN COMMERCE AT HOME AND ABROAD; AND A DESCRIPTION OF THE PRINCIPAL PORTS AND MARKETS OF BOTH HEMISPHERES.

> "There is no man who is not, in some degree, a merchant, who has not something to buy and something to sell, and who does not, therefore, want such instructions as may teach him the value of possessions or commodities This is the design of the Commercial Dictionary, which, though immediately and primarily written for the merchant, will be of use to every man of business and curiosity"—
>
> DR. JOHNSON.

LONDON:
WARD, LOCK, AND TYLER,
WARWICK HOUSE, PATERNOSTER ROW.

LONDON:
PRINTED BY J. OGDEN AND CO.,
172, ST. JOHN STREET, E.C.

PREFACE.

COMPARATIVELY few people, even men engaged in business, possess a Dictionary of Commerce, although it is probably the work of reference that is of the greatest service where its value is understood. Such a work should exhibit the knowledge of a man of business with information gathered from reliable sources regarding the state of trade in all parts of the world, and present the combination in such a manner that, in so far as commercial matters are concerned, the inquirer may be well satisfied. To estimate its importance we need only consider how advantageous it is in buying and selling to have the advice or assistance of an expert, one who can give at the right moment, the exact information wanted, thus saving time and preventing mistakes. In a general way, a Dictionary of Commerce aims at affording the same assistance as the human agent, with the additional advantage of being always at hand. But hitherto a book of this description has never been published at a price within the reach of the public at large, for the works of McCulloch, Waterson, and others, are costly, not perhaps more so than their worth demands, but, at any rate, they are too expensive to become popular outside the higher circles of commerce. It was, consequently, thought desirable to publish a Dictionary of Commerce, as one of "Beeton's National Reference Books," which should contain a concise account of the commodities bought and sold at home and abroad, an epitome of the law and customs observed in the commercial world, with such directions in keeping accounts, in dealing with merchantable property and in transacting business as are generally followed in mercantile concerns. In this handy form it will be found of service to both traders and non-traders. Important questions are continually arising in connection with matters of business, and as these are of abundant growth and are generally so varied as to be not always within the scope of one's experience, it is well worth the while of every business man to possess a book of reference which he may conveniently and confidently consult.

RONALD SMITH.

London, 1873.

BEETON'S

DICTIONARY OF COMMERCE.

A

A, in commerce, stands for accepted.

AAA signifies, among chemists, amalgam, or the operation of amalgamation.

Aaggi-Doggii, in Persian, means "The Bitter Mountain," being the name given to a dangerous passage taken by trading caravans on crossing the frontiers of Persia on the route from Constantinople to Ispahan.

Abacus, a table used in calculations by the ancients.

Abaft, the stern part of a ship, in sea phraseology.

Aba-gaiton, Turkish braid for cloaks.

Abandonment [Fr. *délaissement*] in commerce, means the surrender of the subject-matter of an insurance policy when it has either been destroyed or injured so as to be of little value to the assured. According to Arnold, abandonment is defined to be "the act of cession, by which, in cases where the loss or destruction of the property, though not absolute, is highly imminent, or its recovery is too expensive to be worth the attempt, the assured, on condition of recovering at once the whole amount of the insurance, relinquishes to the writers all his property and interest in the thing insured as far as it is covered by the policy, with all the claims which may arise from its ownership, and all the profits which may arise from its recovery." An abandonment must be total, as in no case may one part of the property damaged be retained when jointly insured with another, consequently it is usual to insure for different objects, as by this means they may be surrendered separately. When once this course is adopted it is final, and may not be altered even if the loss has been proved to be of a less disastrous character than was supposed previously. Notice of abandonment ought to be given to the underwriters as soon as the owner of the property is furnished with all the facts of the case. The facts may be communicated either orally or in writing, and the notice should contain a distinct use of the word "abandon," and in his subsequent procedure the assured should regard himself simply as the trustee for the insurers, as by recognizing any sale of the damaged property or retaining the proceeds of such a sale in his hands otherwise than as a trustee or agent he prejudices his claims against the underwriters. When abandoned, the subject-matter becomes the property of the insurers, who become liable for the necessary expenses of the casualty, but not for any claims unconnected with the loss, nor for the fulfilment of any engagements entered into by the owners, master, or freighter of a ship.

Abas, a Persian weight of 3⅛ grains avoirdupois, used in weighing pearls.

Abasas, a second-class wine of the Douro, Portugal, considered light and wholesome if unadulterated.

Abassi, a Persian silver coin worth about one shilling sterling; there are double and treble Abassis, which, being liable to adulteration, the payment of the coin is made by weight and not by the number of pieces.

Abat Chaûvee, an inferior kind of French wool.

Abatelement, a process adopted in the East, which deprives merchants of the right of trading when they repudiate their bargains or refuse to liquidate their obligations.

Abb, the yarn of a weaver's web is so called, the *wool of which is called Abb-wool.*

Abba, a coarse durable cloth made for home consumption in the Velayet of Adrianople.

Abbas, a woollen cloak worn by the natives of Turkish Arabia, manufactured and sold in Bagdad, according to quality, at from 30 to 500 piastres each.

Abbocati, the name given to their sweet wines by the Italians. They are Moscatello, Alsatico, Vino Santo, Vernaccia, and are the produce of the Roman States.

Abdelari, a fruit grown in Egypt resembling the melon.

Abel-Mosc, or Ambrette, is the seed of a plant growing in Egypt and the Antilles Islands whose leaves are greenish and velveted, much resembling those of marsh-mallows, and therefore called by botanists the velvet marsh-mallow of the Indies. The seed is scarcely bigger than the head of a large pin, in form like a little kidney; greyish, and, as it were, shagreened on the upper part, with a smell partaking both of amber and musk. It is principally used as a composition in some perfumes. It should be chosen new, plump, dry, clean, and of a good scent.

Aberdare Railway, guaranteed 10 per cent. in perp. by Taff Vale, *sub. cap.* £50,000, *share* 50, *par* 50, div. paid 10 per cent. per an., payable March and September: *prices* in 1869, highest 107½, lowest 102; in 1871, highest 109, lowest 104. Market, Bristol. Address, Exchange Buildings, Bristol.

Aberdeenshire, an extensive county in the N.E. of Scotland, bounded by the North Sea on the N. and E. by the counties of Kincardine, Forfar, and Perth on the S., and by Inverness-shire and Banffshire on the W. *Pop.* 244,607; *area*, 1,260,625 stat. acres; *occupiers of land* 11,656; average extent held by each, 49 acres; acreage under crop of all kinds, bare, fallow, and grass, 573,554 acres; *under corn crops*, wheat, 755 acres; barley or bere, 17,964 acres; oats, 191,305 acres; rye, 696 acres; beans, 241 acres; peas, 281 acres; total 211,242 in 1870 against 211,222 acres in 1869.

Green crops, Potatoes, 8,062 acres; turnips, and swedes, 94,402; mangold, 61 acres; carrots 52 acres; cabbage, kohl rabi, and rape, 147 acres; Vetchis, lucerne, and other green crops, 1,658 acres; total, 104,382 in 1870 against 103,628 acres in 1869. Flax, 18 acres; Bare, fallow, or uncropped arable land, 1,050 acres; clover, sanfoin, and grasses in rotation, 226,506 acres; permanent pasture, meadow or grass, not broken up in rotation (exclusive of heath or mountain land), 30,356 acres.

Live stock. Horses, 22,822; cattle, 155,714; sheep, 137,922; pigs, 8,908.

Manufactures. Linen and sail cloth chiefly.

Minerals. Gravel is a valuable and extensive production of the county. The parish of Old Machar produces manganese; limestone and granite abound in various places; plumbago is found near the Deveron, and at Peterhead onyx pebbles are to be met with; amethysts and acqua-marines of a fine colour and exceedingly hard are found in several parts of this county.

Abkarry, revenue derived in India from duties levied on the manufacture and sale of intoxicating liquors and drugs, such as toddy, pachwai, and arrack, opium, bhang churrus, &c.

Aboard, in or on board of a vessel.

Aboucouchou, a description of woollen cloth made in Languedoe, Provence, &c., in France, and exported via Marseilles to the markets of the Levant.

Abra, a Polish coin, value about 12½*d.* sterling. At Constantinople it passes for one-fourth of an *aslani*, and at Smyrna and Cairo it is current for the same value as a Dutch dollar.

Abrohani, a sort of fine muslin of Bengal.

Abrotanoides, coral resembling southern wood, found on the bottom of the sea in the Indian Ocean.

Abrotanum, the male and female evergreen plant called southern wood.

Abridgment, a summary or contraction of a writing, &c., wherein the less material things being omitted or more briefly mentioned, the whole is brought into a lesser compass.

Absinth, a bitter and aromatic plant grown in Southern Europe, from which a liqueur is produced largely consumed on the Continent.

Abrus, the name of a red bean grown in Egypt and India.

Abucco, or **Abocca**, or **Abocchi**, a weight of Pegu, weighing a pound and a half.

Abukesb, a base dollar formerly current amongst the Arabs, but of Dutch coinage.

Abwab signifies in India heads or subjects of taxation, miscellaneous cesses, imposts, and charges.

Acacia. [Fr. *Sucd'acacia*, Ger. *Acaciensaft*, It. *Acacia*, Sp. *Acacia verdadera o' de Levante*, Port. *Acacia*], a juice squeezed from the kernels of the pods of the Acaciavras, a thorn shrub of Arabia and Egypt. It is prepared in round balls covered with fine bladders, and is of a tan colour, smooth and shining; it is of an unpleasant taste.

Acapulco, a seaport on the western coast of Mexico, of little commercial importance. *Lat.* 16° 50′ 29″ N. *Lon.* 99° 46′ W. *Imports*. Principally cotton goods, hardware, and wines. *Exports*. Cotton, hides, timber, fruit, and shells.

Acceptor is the person who accepts the responsibility of paying a bill when it matures or becomes due. His name is written across the bill, and also the place where it will be paid on presentation.

Acceptilation. The remission of a debt; an acquittance from a creditor without payment.

Accil, amongst chemists, means lead.

Accommodation Bills are instruments used to obtain capital on apparently the same basis as bills of exchange, but in reality on the good faith of one or more individuals to provide for such bills when they mature. The difference between a *bona fide* bill and one of accommodation is, that in the first case the acceptor pays because he has received value; and in the other, the drawer of the document, because it is he alone that has been benefitted. It is customary to give the acceptor an undertaking to provide for the bill at due date, though that does not protect him from being proceeded against if the bill has not been paid; it is only evidence that he has received no consideration in an action to recover from the drawer the amount of the bill which he has been forced to pay. Such paper is at times of great service, as thereby a merchant may be enabled to hold over his stock during some period of decline in the market, and which, under other circumstances, he might be compelled to sell at a ruinous loss; but it is only at such a crisis an accommodation bill should be used. Bankers are perfectly well aware of their character, though they profess to represent real property, and accordingly they are discounted at higher rates than *bona fide* bills. A discounter considers that, as fictitious bills are less likely to be paid than real ones, because the dealers in this class of paper are more adventurously speculative than other people, he must protect himself by an increase of discount. That interest sweeps away a considerable portion of business profits, and leads a merchant to attempt covering the loss by an extended trade in an exceedingly risky direction, and which probably points to the Bankruptcy Court, or, at the least, a composition with his creditors. Parties to accommodation bills generally flock together; so that when one falls, the others are dragged down with him.

Account is the term applied to all kinds of computations or statement by numbers. (*See* **Bookkeeping.**)

Accountant is a person who makes up and keeps accounts, prepares balance-sheets, audits the books of public companies, and is engaged in the work of a general bookkeeper.

Acetabulum, a dry and liquid measure of the Romans, weighing about 10 drachms.

Achia, a pickle of a pale yellow colour imported from India.

Achiott, a red drug obtained from the Anotta tree, chiefly in Brazil, and used in dyeing.

Achith, a vine grown in Madagascar, which ripens in December, January, and February. Its fruit is about the size of a green pea.

Acori is the blue coral fished up on the coast of Africa from Rio-del-Re to the river of the Camaronis.

Acorns [Ger. *Eicheln*, Du. *Akors*, Fr. *Glands*, It. *Ghiande*, Sp. *Bellotas*, Rus. *Schedudii*], the seed or fruit of the oak.

Acquit, a discharge or release in the United Kingdom of Great Britain and Ireland.

Acquittance, a written discharge of a debt, in some cases made before a notary public. In law, an acquittance should be sealed. It is equivalent to a receipt in full of all demands being debts, except such as are on speciality, *viz.*, bonds, bills, and other instruments sealed and delivered, on which account these only can be destroyed by some speciality of equal force, such as a general release.

Acre of land is four square roods, a rood forty perches or poles; a Welsh acre is double.

Act of Honour is a declaration made before a notary public by a *third* person, who is interested in preserving a friend's credit if his acceptance has been returned dishonoured through absence or illness, and by which act the expenses of re-exchange are avoided, and the absentee is enabled to hold all persons concerned liable for re-imbursement, if necessary. The Act of Honour runs thus: "Afterwards, on the same day, month, and year, before me, the said notary, and witnesses, personally came and appeared, with Mr. ——, of this city, merchant, who declared he was ready and would accept the said Bill of Exchange now under protest, for the honour and account of Mr. ——, the drawer (as the case may be), holding him, the said drawer thereof, and all others concerned, always obliged to him, the said appearer, for re-imbursement in due form of law." An Act of Honour is also performed in want of regular acceptance.

Adamant, a diamond, a loadstone.

Adamantine Spar is the hardest substance known, with the exception of a diamond; specific gravity, 4. It contains 90 per cent. of alumine, with a little iron and silicia, and is generally of a pale grey or greenish colour, but sometimes of red and brown tints. It is found in India, China, and some parts of Europe. The Indian variety is considerably whiter than the Chinese, and is usually deemed the purest. In the East it is used for polishing steel and cutting gems, but the European lapidaries prefer diamond powder.—*Waterson*.

Adarine, a Spanish weight, used chiefly in Spanish America, particularly at Buenos Ayres, and is one-sixteenth part of an ounce Troy weight.

Adatis, a description of fine Bengali muslin of 13 yards to the piece.

Aden, a seaport of Arabia, about 100 miles E. of the entrance to the Red Sea, and 118 miles S.E. from Mocha. *Lat.* 12° 52′ N. *Lon.* 45° 5′ E. *Pop.* 30,000. The town is situated on a rocky promontory, which forms two bays, one of which, to the W., is the coaling-ground of the mail and other steamers sailing to and from Suez. This bay is well sheltered and accessible, and, within thirty yards of the shore, maintains at low water a depth of upwards of twenty feet. At one time Aden was a city of great wealth and influence, now its trade is only nominal; but being situated in the direct line of communication between India and Europe, it has acquired importance as an intermediate station.

Adit, a passage cut in the side of a hill in order to convey ore from the mine without craning it to the mouth of the pit. It is cut wide enough to permit the workmen to pass freely with their wheelbarrows.

Adenos, marine cotton, which is the produce of Aleppo.

Adjustment, in marine insurance, is an expression used in the settlement of losses on policies of insurance on vessels or cargo, as the case may be. When an adjustment has been made, the underwriter records the same on the policy thus: "Adjusted a loss on this policy of ——, payable in — months." It is then dated, and, until the money is paid, is equivalent to a promissory note, and cannot afterwards be disputed.

Admeasurement, in shipping law, is thus explained: "The tonnage of ships inwards is to be measured thus: "Take the length of the keel within board (so much as she treads on the ground), and the breadth within board by the midship beam from plank to plank, and half the breadth for the depth, then multiply the length by the breadth, and that product by the depth, and divide the whole by 94, the quotient will give the true contents of the tonnage."

Administration is the name given to the custom-house at Callao.

Adrianople, Red or **Lizary**, a kind of madder brought from the Levant.

Adrianople (Turkish, *Edrench*), an important city of Turkey in Europe, on the left bank of the Maritza, 134 miles N.W. of Constantinople. *Lat.* 41° 41′ 17″ N. *Lon.* 26° 35′ 41″ E. *Pop.* 90,000. *Chief products.* Wheat, barley, Indian corn, rye, and silk. *Imports.* Grey, white, and printed cotton goods, hardware, earthenware, &c. Trade is in the hands of Greek merchants. Respecting the cultivation of silk in the Vilayet of Adrianople, Vice-Consul Blunt says:—"The mulberry-tree—the alba, or white-fruited species—grows easily and abundantly in these provinces. Vast plantations of it have been formed and successfully reared within the last thirty years or so, capable of feeding a very considerable quantity of silkworms, and the growers bestow on them great care and attention, with a view to obtain from them a greater abundance of good leaves. Extensive cocooneries—called by the natives bojeliks—also exist in all the producing districts, besides other facilities eminently conducive to the rearing of silkworms. The fact is that these districts possess all the necessary elements but one for the cultivation of good silk. What the cultivators require is a superior kind of sound eggs, which, I apprehend, is difficult to procure. The principal native growers have made, and continue to make, at considerable expense and trouble, very active efforts in this direction, with a view to renovate the species with healthy larvæ. They import eggs of the best sort of silkworm from France and Italy, from Persia and Japan, and other producing countries. . . . But a very small portion of the Adrianople silk crop is manufactured in the country, most of it is exported abroad raw, principally to France. 80,000 lb. weight of dried cocoons is the average quantity annually consumed in the reeling establishments." Adrianople reeled silk is much esteemed in the French markets.

Sheep Husbandry.—The rearing of sheep is carried on extensively throughout the province. The two prominent breeds are the "kivirjik" and the "karabash." The former bear some affinity to the demi-merinos or "metis," and are esteemed more highly than the "karabash," which are reported as not unlike the sheep in Macedonia and Thessaly. The wool of the kivirjik is long, soft, and elastic, and twisted into ringlets: it is considered superior to all the other wools exported from Turkey, and is classed next to the merino and metis fleeces. The wool of the "karabash" is exceedingly coarse. Four or five shepherds and six to eight dogs accompany a flock of 1000 sheep. Of the sheep, one male is kept to twenty females. The lambing season begins in January in the lowlands, and late in February in the Balkan districts. The shearing takes place in May. A shearer can cut about 50 sheep a day.

RETURN OF NUMBER AND VALUE OF SHEEP AND GOATS IN VILAYET OF ADRIANOPLE DURING 1867.

Province.	Number of Sheep.	Value of Sheep at 40 piastres each.	Number of Goats.	Value of Goats at 30 piastres each.
Adrianople	1,210,000	48,400,000	200,000	6,000,000
Philippolis	1,420,000	56,800,000	215,000	6,450,000
Slimnia	1,022,000	40,880,000	205,000	6,150,000
Gallipoli	540,000	21,600,000	98,000	2,740,000
Rodosto	320,000	12,800,000	60,000	1,800,000
Totals	4,512,000	180,480,000	778,000	23,340,000

Thus giving a total of 5,290,000 sheep and goats, representing 203,820,000 piastres, or £1,819,731 sterling. The following account shows the cost, expenses, and quantity and value of the produce of a flock of sheep in 1867. If we subtract the expenses from the receipts, we find a profit of 25,910 or nearly 29 per cent. on original outlay:—

Cost.	Piastres.
1,800 "kovorins" (ewes) at 45 piastres each	81,000
150 "kotch" (rams) at 50 piastres each	7,500
50 "ketches" (goats) at 40 piastres each	2,000
Total cost, piastres	90,500

Expenses.	Piastres.
Shepherds' wages, including food, sandals, &c.	8,000
Tax, at 4 piastres per head	8,000
Rent of pasture	6,500
Barley, hay, and salt	7,000
Sundry contingent expenses	1,500
Total, piastres	31,000

QUANTITY AND VALUE OF PRODUCE.

	Piastres.	Piastres.
From sheep:—1,400 lambs, at 16 piastres each	22,400	
2,000 okes of wool, at 9 piastres per oke	18,000	
Milk, butter, and cheese	15,000	
Total value of sheep produce		55,400

From goats:—40 kids, at 14 piastres each	560	
Milk, butter, and cheese	500	
Wool or hair	450	
		1,510
Total value of produce from sheep and goats		56,910

Wool.—The average annual quantity of wool produced in the Vilayet is estimated at about 4,899,000 okes, or 122,475 cwt. Fully one-third is exported to foreign markets—the greater part to Marseilles; the remainder is retained for home consumption. Sheep's wool and wool in lime are only taken up for foreign account. Lambs' wool is too short for the manufactories abroad. That in lime is obtained from the tanneries established in most of the towns in the Vilayet.

The trade for foreign account begins in May, is very rife in June and July, and terminates in September. The wools are exported unwashed; the grease or "yolk" is allowed to remain. A good average unwashed fleece weighs about 3 lb.

Manufactories. — It is estimated that 300,000 okes of wool are annually manufactured by the natives of the Vilayet into woollen and worsted stuffs. The manufactories are in the provinces of Philippolis and Slemnia. The principal productions are as follows:—

Abba. A coarse, durable cloth, much used by the natives. It is made in pieces of an average length of 12½ yards by 14 inches broad, weighing about 8¾ lb.

Shayak. Cloth and flannel, made from fine wool, also very durable and much used, and more expensive than the abba.

Kelims. Carpets and rags dyed in bright fast colours.

Ketche. A coarse kind of felt used for carpeting and horse-clothing.

Aba-gaiton. Braid for cloaks.

Yun-harji. Red sashes of various lengths, much used by the Mahommedans.

Ibrams. Small carpets and rugs, used for travelling, and horse-cloths.

Tchorabs. Stockings for the military.

Eldevens. Coarse kind of gloves.

The textile art of the natives has improved a little within the last few years; better sorts of Abba and Shayak cloths are now made by hand-looms, which have been adapted to the weaving of stripes, checks, and twills. This improvement is owing to the introduction of foreign power-looms and carding-machines. An establishment so furnished in Philippolis produces annually about £40,000 worth of cloth, and another in Slemnia employs 400 hands, and consumes annually some 250,000 okes of wool.

Goats-hair is not exported, but is manufactured into carpets, felt, horse and cattle blankets, nose-bags, bandages, saddle-bags, &c. The goats of the Vilayet are estimated to furnish about 350,000 okes of hair, valued at

1,750,000 piastres (£15,625). The average value of unwashed goats-hair is five piastres for one oke.

Sheep, lamb, goat, and kid skins are bought largely for home and foreign consumption. The first sort, and considered very superior, is called "Sahtian:" it is made of goat-skins. The second sort, made of sheep-skins, is called "Mechin," and is of inferior quality. The different kinds of skins are collected from the butchers and others, and brought to the principal centres of the export trade—Adrianople, Philippolis, Rodosta, Gallipoli, Enos, and Burgas. The province of Adrianople exports about 85,000 lamb-skins to England, and 60,000 kid-skins to England and France. The lamb-skins most esteemed in England weigh about 315 lb. per bale of 120 pieces; they are sold at 4½ to 5½ piastres each. Goat-skins are cut up and made into sandals, pouches and thongs, &c., and some, when stripped off the slaughtered animals, are made into bags to contain oil, butter, and cheese.

Money.—112 piastres = £1 sterling; 4½ piastres = 1 franc; weight, 1 oke = 2 lb. 13¼ oz.; 40 okes = 1 cwt.; 50 kilogrammes = 1 cwt.

ADULTERATION, the act of debasing by an improper mixture. Adulteration of coin is effected by making use of a wrong metal or an undue alloy, or too great an admixture of the baser metals with gold or silver; adulterating is somewhat less extensive than debasing, which includes diminishing, clipping, &c.

AD VALOREM, "according to the value:" an assessment for duty by the Commissioners of Customs.

ADVANCE, the amount of money usually paid on consignment of goods; the sum generally amounts to about three-fourths of the invoice price.

ADVENTURE, a shipment of goods sent abroad under the charge of a supercargo for sale on account of the shipper.

ADVENTURINE or **AVENTURINE**, a peculiar stone found in Bohemia, Silesia, and in several parts of France, of a yellowish-brown colour, speckled, brittle, and capable of taking a high polish.

ADVICE, in commerce, means the information which passes from one merchant to another when the writer has drawn a Bill of Exchange on his correspondent; or, in the case of goods, when a shipment has been made or a sale effected on account of the correspondent.

AEM, **AM** or **AME**, a German liquid measure; it is commonly of 20 vertels or 80 masses; at Heidelberg it is of 12 vertels, and the vertel of four masses, which reduces the *aem* to 48 masses; at Wurtemberg the *aem* is of 16 yunes, and the yune of 10 masses, which makes the *aem* about 160 masses. This measure is not the same as the *aam* of Amsterdam.

ÆSTUARYA, in geography, denotes an arm of the sea which runs a good way within land, such as the Bristol Channel and many of the friths of Scotland.

Affa, on the coast of Guinea, is an ounce weight of gold; the half ounce is called *eggeba*.

Affenbourgh Hamen, a secondary Rhine wine produced near Coblentz.

Affidavit is an oath in writing sworn to before a magistrate or some functionary authorised to administer one. The usual forms are:—

Affidavit of the due execution of a Prosecution or letter of Attorney.

A B of —— maketh oath and saith that he was present and did see C D of —— duly sign, seal and as his act and deed deliver the procuration or letter of attorney hereunto annexed, and that the same C D subscribed against the seal of the said procuration or letter of attorney is of the proper handwriting of the said C D, and the names of this deponent and of —— subscribed to the said procuration or letter of attorney as witnesses to the due execution thereof are of this deponents and of the said —— own proper respective hand-writing.

Affidavit of goods sold and delivered.

A B of —— maketh oath and saith that C D of —— named in the procuration or letter of attorney herewith annexed is justly and truly indebted unto him, this deponent, in the sum of £—— sterling for goods and merchandise sold and delivered as more fully appears by the account also hereunto annexed.

Affidavit for Money Paid, Lent and Advanced, Laid Out and Expended, &c., &c.

A B of —— maketh oath and saith that C D of —— named in the procuration or letter of attorney hereunto annexed is justly and truly indebted unto him this deponent in the sum or £—— sterling for so much money lent and advanced by this deponent, and also paid, lent out and expended to and for the use and for and on the account of him the said C D and for lawful interest accrued therein from the several and respective times of paying lending and advancing the same, and also exclusive of lawful interest which has already or may hereafter accrue and become due on the several bonds, bills, and notes according to the several and respective tenors thereof, as more fully appears by the said bonds, bills, notes, and accounts, as the several authentic copies thereof (as the case may be), and by the general account current between the said C D and him the deponent also hereunto annexed. And this deponent further saith that the sum of £—— above mentioned is still justly due and owing to him this deponent, and that he this deponent hath not had or received any part thereof, either from the said C D or of or from any other person or persons for or on account of the said C D, save and except what is credited by the said account current and subscribed by him this deponent.

Affidavit for Goods Sold and Delivered when made by a Clerk.

A B of ——, clerk to Messrs. C and D of ——, maketh oath and saith that E F of —— is justly indebted unto the said C and D for goods and merchandise sold and delivered to the said E F and forwarded for them by this deponent; and this deponent further saith that the several accounts and invoices also hereunto annexed and marked A No. 1 (as the case may be) were duly extracted from the books of the said C and D and examined by him this deponent.

Quaker's Affirmation.

A B of —— (being one of the people called Quakers) solemnly affirmeth that, &c. (as in affidavits only you say affirmeth *instead* of maketh oath, and affirmant *instead* of deponent affirmed, &c.

African Lard is obtained by repression from the kernel of the nut of the *Elais Guineensis*, a native of the coast of Guinea, and has properties dissimilar to the palm oil from the same tree. It has the appearance of hard butter, is very beautiful, rich, and clear, and for cooking purposes is unexcelled by the best lard.—*Simmonds.*

Afslagers are auctioneers at Amsterdam who are appointed by the municipal authorities to attend public sales. They bear also the name of vendic meester.

Aft, on board ship, is the same as abaft.

Afwesland a copper coin of one of the provinces of Sweden.

Agal, a woollen cord used in an Arab head-dress, manufactured and sold according to quality at from 10 to 125 piastres each.

Agallocum or **Agallochum**, a species of aloes wood, odoriferous, variegated and acrimonious to the taste, of hard substance, difficult to burn, but when it takes fire a quantity of sap runs from it, which is used for medical purposes.

Agar-agar an edible seaweed found in great abundance on the Malayan Islands. From the better kind a glutinous jelly suitable for the table is made, and from the inferior a sort of paste applicable to many useful purposes.

Agate, [Ger. *Achat*, Du. *Achaat*, Da. and Sw. *Agat*, Fr. *Agate*, It., Sp., and Port. *Agata*, Rus. and Pol. *Agat*] a precious stone, takes its name from a river in Sicily Achates. where it was first discovered. It is varied in its colour and the figures it represents, as in many are observed the figure of a dove, and when so it is called phassæates; when the form is that of a horn it is named herackates, and it bears the title of dendrachates when the figures are those of trees. In colour, many are of a dark ash or black, others are tawny, and others again the colour of coral.

Agate, an instrument used by gold wire drawers, which bears the jewel of this name in the centre of it.

Agenda, another term for memorandum book.

Agent is a deputy, broker, or procurator. He is a person entrusted with the management of property by a firm, public company, or, in the case of army agents, by private individuals. He is expected to execute the instructions of his employer to the letter, and if these are left open he must be guided by the practice at the place where he resides. His remuneration is usually by commission, the amount of which varies from 1 to 4 per cent.

Aggourd-Bund, a description of fine silk produced in India.

Agio, a Venetian word signifying aid, which is used in commercial matters to express the difference in value between cash and paper money. It is similar to exchange and, in assurance, premium.

Agito or **Giro**, a small weight of Pegu: two agitos make a half biza, and the biza weighs a hundred tecalis, equal to two pound five ounces heavy, or three pound nine ounces light weight of Venice.

Agreement *for a clerk to go to abroad.*—Articles of agreement indented made &c. between —— and —— of —— of the one part, and —— of —— of the other part, witness that the said —— for the consideration hereinafter mentioned doth hereby for himself his executors and administrators, covenant, promise, and agree, to and with the said —— his executors, administrators and assigns, by these presents, that he the said —— shall and will when required by the said —— go on board and sail in and with such ship or vessel as shall be provided by the said —— for Madras aforesaid, and immediately on his arrival there will enter into service of the said —— for and during the term of three years to be accounted from his arrival at Madras aforesaid, and shall and will dwell continue and abide with the said —— at Madras aforesaid or elsewhere and him diligently and faithfully serve during the said term in keeping the books of account of him the said —— and in such other employment business and affairs as the said —— shall think proper to employ him during the said term, and herein shall from time to time and at all times during the said term do observe perform and fulfil the lawful and reasonable commands and directions of the said —— without disclosing the same or any of his correspondence or the secrets of his employment business, or dealings, to any person or persons whatsoever, and shall not or will not during the said term correspond with any person or persons corresponding with the said —— nor use any traffic or dealings for himself or on account of any other person or persons without the consent of the said —— first had and obtained for that purpose in writing. And the said —— doth for himself his executors and administrators further covenant and promise and agree to and with the said —— his executors and administrators that he the said —— shall and will from time to time during the said term write and keep a true and perfect account and accounts for him the said —— and will not embezzle purloin wilfully waste destroy or misspend any of the goods money moneys merchandize or effects of the said —— or his correspondents or any of them. And also that he the said —— his executors or administrators shall and will from time to time and at all times during the said term upon request make and give unto the said —— his executors or administrators a full just true and perfect account and reckoning in writing of and for all money which he shall receive in or pay out and of all goods which he shall at any time during the said term receive in or deliver out upon the account and for the use of the said —— or any of his correspondents or by the order or directions of the said ——. And also that the said —— his executors or administrators shall and will and truly pay or cause to be paid unto the said —— his executors or administrators, all such sum or sums of money as shall appear to be due upon the foot of every such account or accounts. And also that the said —— shall not nor will at any time or times during the said term trust or deliver forth upon credit any of the moneys goods, wares and merchandize of the said —— or any of his correspondents to any person or persons whatsoever without the special license and consent of him the said ——. And the said —— doth for himself, his executors, and administrators covenant promise and agree to and with the said —— his executors and administrators that he the said —— shall and will in consideration of the said services so to be done and performed by him the said —— as aforesaid pay and allow or cause to be paid and allowed unto him the said —— the yearly salary of —— by even and equal portions &c. And it is hereby declared and agreed by and between the said parties that if the said —— his executors or administrators after the arrival of the said —— at Madras aforesaid shall find him not capable or if the said —— shall not be diligent and faithful in the doing and performing of the service and business of keeping the books and accounts of the said —— or such other business wherein he shall employ him in his trade and merchandise as aforesaid that then and in any of the said cases the said —— his executors or administrators after a month's notice or warning in writing for that purpose given to the said —— shall and may discharge the said —— from his said service, he paying him for his service up to and in full to the time of his discharge, and the sum of —— for his passage to England. And the said —— his executors or administrators or either or any of them shall not from such the said discharge of the said —— be chargeable to allow or pay to the said —— all or any part of the said yearly sums aforesaid for such time of the said three years which shall be then to come and unexpired anything therein contained to the contrary thereof in any wise notwithstanding. In witness, &c.

Aguardiente, a Spanish liquor distilled from the grape, and of ordinary quality.

A Hull, on board ship, is an expression used when a vessel lies over against the wind and sea with fasted canvas in the teeth of a storm.

Aigris, a peculiar stone of a greenish blue colour, without lustre, hard, but does not polish well, which serves as current coin on the Gold Coast of Africa. The natives break it up into small pieces, and bore holes through the centre of these for the purpose of wearing a string of them as ornaments round the neck.

Aipy, a Brazilian liquor made from a species of manico, and consumed in the country.

Aizen, a liquor of Tartary, prepared from cows' milk.

Akkad, manufactures of silk cords in Cairo.

Akyab is a town in the province of Arakan, of great importance as a rice port. *Pop.* 15,536.

Alabama ("here we rest"), one of the United States of N. America, bounded N. by Tennesse, E. by Georgia, S. by Florida and the Gulf of Mexico, and W. by Mississippi. Area, 50,722 square miles, or 32,462,080 acres. *Pop.* 1,002,240. *Lat.* between 30° 10′, and 35″ N. *Lon.* between 85° and 88° 30′ W. *Counties* 52, viz., Autauga, Baldwin, Barbour, Benton, Blount, Bibb, Butler, Chambers, Clark, Choctaw, Cherokee, Coffee, Conecuh, Coosa, Covington, Dale, Dallas, De Kalb, Fayette, Franklin, Greene, Hancock, Henry, Jackson, Jefferson, Lawrence, Lowndes, Lauderdale, Limestone, Macon, Madison, Marion, Marengo, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pirkens, Pike, Randolph, Russell, Shelby, St. Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, and Wilcox. *Cities and Towns.* The capital is Montgomery. Commercial metropolis, Mobile. The other important towns are Hunsville, Tuscaloosa, Florence, Marion, Talladega, Athens, and Jacksonville. *Minerals.* Coal, iron, lime, and marble; red ochre, lead, and manganese are met with. Iron is found in abundance in Shelby, Bibb, Jefferson, and Tuscaloosa counties; also bituminous coal of a good quality. "There are salt, sulphur, and chalybeate springs in different sections of the State. Gold has been found in St. Clair county." Variegated marbles are found on the rivers, particularly on the Cahawba and in Talladega county. *Products.* Cotton, Indian corn, oats, wheat, rye, rice, wool, hay, peas, and beans; barley, buckwheat, tobacco, sugar, butter, potatoes, wine, cheese, hops, flax, and silk; fruit, live stock, honey, molasses, &c. *Timber.* Oak, poplar, hickory, chestnut, mulberry, cypress, loblolly, and pine. *Manufactures.* Eight cotton mills, 25,196 spindles, using 2,820,506 lb. of cotton yearly. The average yarn is 17, and the average per spinner 112; 14 forges furnaces, producing 2,537 tons of castings; pig and wrought iron value £280,876; distilling inconsiderable; 149 tanneries, producing £335,911 worth of leather yearly. *Produce.* Cotton principally, crop about 400,000 bales, averaging 105 dollars per bale, aggregating £42,000,000 dollars, or £7,499,922 10s.; at exchange 5 dollars 60 c. per £. *Trade.* See **Mobile**, the only seaport of the State.

Alabaster [Ger. Du. Da. Sw. *Aabaster*, It. Sp. and Port. *Alabastro*, Fr. *Albâtro*, Rus. *Alabastr*] a stone not unlike marble but softer, used by sculptors in executing small statues, vases, columns, &c., &c.

Alamode, a thin glossy black silk, chiefly used for hoods, mourning scarves, &c.

Alb, a Turkish coin, more commonly known as asper.

Alba Flora, a dry wine similar to Rhenish, the produce of Minorca.

Albacete, a Spanish wine of ordinary quality, the produce of New Castile.

Albernud, a kind of camlet made in the Levant.

Alcanna is a drug brought from the Levant for dyeing purposes.

Alcavala was a tax at one time levied in Spain on the transfer of property whether movable or immovable.

Alcohol [Fr. *Esprit de vin*, Ger. *Weingeist*, It. *Spirito di vins*] is a liquid which forms the intoxicating principle of fermented liquors. It is by the distillation of such liquors that ardent spirits are obtained, and they receive the names of brandy, rum, gin, and whisky, according to the nature of the substance employed, but in every case consist almost entirely of three ingredients, viz., alcohol, water, and a little oil or resin, to which they owe their flavour and colour. When these liquids are redistilled, the first portion that comes over is a fine light transparent fluid, known in commerce by the name of rectified spirit. When as highly rectified as possible, the specific gravity of the liquid obtained does not appear to be less than ·820 and is generally more. Alcohol cannot by this process be deprived of the whole of the water with which it is combined, but by redistillation with hot muriate of lime it is procured of the specific gravity ·791 at 63° or ·796 at 60° Fah. In this state it is the strongest that can at present be produced, and it is therefore called pure or absolute alcohol. The alcohol of commerce is never so strong as this, the specific gravity is seldom under ·837. In this state it is fragrant, limpid, colourless, volatile, inflammable, and of a pungent agreeable taste.—*Waterson.*

A-Lee, on board ship, is a term only used when the wind crossing or flanking the line of a ship's course presses upon the masts and sails so as to make her lie over on one side which is called the lee side, hence when the wheel is moved round to this side it is said to be a-lee or hard-a-lee.

Alegar, used in dyeing, is sour ale.

Alenquer, a second-class wine of Estremadura, Portugal, of a quality resembling an inferior Bordeaux brand.

Aleppo, an inland city of Asiatic Turkey, in the North of Syria, and situated on the Kuweek. *Lat.* 36° W. *Lon.* 37° 10′ E. *Pop.*

100,000. *Exports* (from Alexandretta and Mersyna). Cotton, wool, gall-nuts, silk, cereals, tobacco, camlets, gold and silver tissues, &c. *Imports*. Coffee, sugar, grey and printed calicoes, hardware, &c. &c. Aleppo is one of the great centres of Turkish commerce, whence caravans convey European merchandize to Bagdad, Bussorah, and the Persian seats of trade. For details of trade see ALEXANDRETTA and MERSYNA.

ALEXANDRIA (Iskenderyeh), a seaport of Egypt on the Mediterranean, 14 miles W. of the most westerly branch of the Nile, and 112 miles N.W. of Cairo. *Lat.* 31° 12′ 9″ N. *Lon.* 29° 51′ 40″ E. *Pop.* 170,000. *Ports.* Rosetta and Damietta, situated on the E. and W. of the Nile. *Manufactures.* Coarse white cotton clothing for soldiers, cotton and wool stuff for the women, dyeing, Manchester grey calico, and gold and silver work; agricultural labour, railways, and canals absorb a great portion of the lower class. *Agriculture.* Good crops of grass and grain of all kinds and an important yield of cotton, which is the principal production of the country. There are about 4,000,000 feddans or acres of land under cultivation in Egypt. The best land is that adjoining the Nile on account of the water supply. The ordinary land tax is of 117 piastres of 97½ to the £ per acre for first quality of inherited ground, for second quality 100 piastres, and third quality 90 piastres. Albadies or grants of land pay half. Nearly all the land in Lower Egypt is rated as first quality. The aggregate sum payable per acre is about £1 8*s.* The taxation is so oppressive that many of the fellahs and many of the large sheikhs are being rapidly reduced to a state of beggary from a condition of comparative prosperity. In many villages the men fly on the approach of the taxgatherer, having already parted with everything belonging to them, including even their wives' jewelry. The cotton of Egypt is that known as "Jumel" or "Maho," a fine clean staple, which was discovered in 1820 by a Frenchman named Jumel then on a visit to Cairo. The plant is cultivated in a rich strong soil retentive of moisture; where the shrub can acquire an abundant sap and furnish well filled pods. "In Lower Egypt the earth in which it is intended to sow the cotton is only once laboured. In the Saeed, or upper provinces, if the soil be friable or light it is worked twice; furrows are then traced at a distance of forty or fifty inches. Generally, in all the provinces the earth is worked to a depth of about 15 inches, but if strong and humid the depth is less great. Holes are then made of about three or four inches in diameter and as many in depth. From two to four grains of cotton seed are then dropped, after these seeds have been soaked in water for twenty-four hours to soften them and to hasten the germination. The seed is always sown in March and April. About a yard is left between these holes, and the plants are allowed to grow up in the same hole from the height of one foot to three without injury thereby to the growth."—*E. R. Gleddon*. The plants are weeded when four inches high, and during the first, second, and third years they are pruned to increase their productiveness. The height attained in the first year is three feet to six, after which the tree diminishes in size. "The cotton crop commences the first year, as it does in others, in the month of July, and when the weather is not too cold it finishes in January; but if the winter sets in early the gathering is over in December. . . . . The pods are picked off the shrub and collected chiefly by women and children, who may each gather in one day about 18 pounds of cotton. After being stored in the villages it undergoes the process of drying in the sun and in ovens, so that the seed may be separated from the cotton with greater facility. . . . The crop of a single plant is about a pound and a quarter, gross weight, the first year; in the second it gives from a pound and a quarter to two pounds, and the same quantity in the third year. A man cultivates as much as four feddans of ground (fully equal to four acres), each feddan containing about a thousand cotton trees." After being ginned and packed the gross weight of a bale averages 230 rottles, equivalent to 228 lb. or 219 lb. nett weight, after allowing for weight of sacking and cordage. The cantar, by which the cotton is bought is now equal to 96 lb. *Exports.* Of the shipments of cotton from Egypt in 1867, England received 188,550 bales against 246,438 bales in 1866; France received 25,836 bales against 34,707 in 1866, and Austria received 23,674 bales against 16,851 in 1866. The total amount of cereals exported in 1867 was 1,048,687 against only 172,682 in 1866. The following table shows the comparative amounts and values in 1863 and 1867:—

	1863.		1867.	
	Qrs.	£	Qrs.	£
Beans	331,955	362,600	377,355	522,500
Wheat	540,792	643,800	502,677	973,440
Maize	94,240	88,920	43,648	62,320
Barley	71,858	56,800	77,810	85,340
Lentils	40,300	37,200	27,820	35,530
	1,079,145	1,189,320	1,029,310	1,679,130

The principal buyers of the cereal shipments are France and England. The other exports are sugar, incense, gums, mother-of-pearl, horns, ostrich feathers, hides, wool, drugs, rags, &c. *Imports.* Manchester grey, white, and printed calicoes, unbleached yarns, copper, coals, hardware, earthenware, woollens, &c. The total value of imports in 1867 was £6,089,980, against £5,640,660 in 1866. *Shipping.* The total number of vessels of all nations which arrived in 1867 was 3,181, of 1,746,902 tons, against 3,703, of 1,373,217 tons in 1866. *Trade* between the United Kingdom and Egypt is almost entirely in the hands of the Greek merchants of Manchester and Liverpool.

ALEXANDRETTA (Iskanderoon), the chief seaport of Aleppo, distant 70 miles W. and 23 miles N. of Antioch, situated on the E. coast of the bay which bears the same name. *Lat.* 36° 35′ N. *Lon.* 36° 9′ E. *Pop.* 5,000. *Shipping.* 169 British vessels entered and cleared during 1869, with an aggregate tonnage of 132,787; 150 French vessels, 105,000 tons; 108 Egyptian vessels, 85,200 tons; and 196 coasting vessels, under Turkish colours, 7,859 tons. These figures show a considerable increase on those of the last few years, owing to a revival of trade and the change of routes made by the caravans to and from the interior of the country, on account of the greater security now existing in the districts occupied by nomadic tribes in the province than in those of the neighbourhood.

Goods Imported in 1869.

Articles.	Quantity.	Value.
	Francs.	Kilos.
Coffee	175,980	281,568
Sugar	389,160	454,020
Water twist	295,000	2,950,000
Cloth	46,340	925,800
Manufactrd. goods.	2,747,985	23,171,880
Hardware	516,700	1,033,400
Cochineal	96,450	2,411,250
Silks and silk stuffs.	121,600	3,648,000
Paper	199,900	399,800
Total	4,589,115	35,276,718

The above Goods were Imported from :—

Countries.	Quantity.	Value.
	Francs.	Kilos.
England	2,725,070	21,866,686
France	1,135,255	7,344,980
Italy	51,600	120,120
Greece	72,475	501,800
Turkey	393,935	4,756,320
Egypt	210,780	686,812
Total	4,589,115	85,276,718

Goods Exported.

Articles.	Quantity.	Value.
	Kilos.	Francs.
Cotton	2,121,360	3,535,600
Wool	2,121,600	4,711,800
Gall nuts	785,330	1,208,200
Silk	49,350	1,480,500
Cereals	6,110,700	3,055,350
Manufactrd. goods	366,720	6,393,000
Tobacco & tumbak	364,910	417,040
Total	11,919,970	20,801,490

The above goods, where exported to, with respective amounts :—

Countries.	Quantity.	Francs.
	Kilos.	Francs.
England	5,515,390	8,601,100
France	523,010	592,250
Italy	2,624,050	1,471,000
Turkey	2,734,830	8,757,000
Egypt	522,690	1,380,140
Total	11,919,970	20,801,490

Consul and Lloyd's agent, J. H. Skene. *Postage.* Letters not exceeding ½ oz., 6*d.*

ALEVOR, a red wine of Spain, the produce of Minorca.

ALFANDIGA, the name of the custom-house at Lisbon.

ALGERIA [Fr. *Algerie*], a French colony on the W. coast of Africa, formerly a subordinate part of the Turkish Empire. The country is situated between *Lat.* 35° 37′ 5″ N.; extending from *Lon.* 2° 11′ W. to 8° 53′ E., bounded on the N. by the Mediterranean, on the E. by Tunis, on the S. by Sahara, and W. by Morocco. *Pop.* 2,921,246. *European pop.* French born or naturalized, 122,119; Spaniards, 58,510; Italians, 16,655; Anglo-Maltese, 10,627; Germans, 5,436; other nationalities, 4,643. *Mussulman pop.* In civil territory and centres of colonization in military territory, 217,098; in military territory, 2,434,974. *Israelites*, 33,952. The European population has increased 35,169 since 1861, and the Mahomedan has diminished 80,779 during the same time. *Colonization.* Government lands are sold at prices fixed by the Governor-General in Council, according to estimates made on the spot. The various descriptions of land are classed as follows :—

1st class. Land irrigable, fitted for high cultivation and the establishment of hydraulic machinery.

2nd class. Land arable, fitted for pasturage.

3rd class. Land bad soil, rocky, access difficult.

The following are the conditions of the sale:

1st. Payment to be made by annual instalments, the first being payable at the moment of the sale. Registration is made at the expense of the acquirer, who receives his title within a month.

2nd. The purchaser is put in possession on payment of the first instalment.

3rd. No charge is made for the valuation of the land.

4th. The sale is cancelled in case of non-payment of the instalments.

5th. The legal rate of interest is payable on the instalments not paid at once. This rate was originally fixed at £10 per cent., but it has since been reduced to £5 per cent.

This system was commenced in 1866. During that year 33,825 acres of land were sold, and realised £36,718. During 1867 the sales amounted to 12,750 acres, valued at £3,563.

Finance and Trade. The following summary of the finance and trade of Algeria every tenth year, since 1830, will show the rapid progress made by this colony:—

	Finance.		Trade.	
Years.	Receipts.	Expenditure.	Imports.	Exports.
	Francs.	Francs.	Francs.	Francs.
1830	250,059	18,000	5,000,000	1,500,000
1840	5,610,706	7,206,372	31,700,000	2,500,000
1850	19,632,271	27,959,358	87,900,000	6,700,000
1860	38,908,900	39,471,729	194,700,000	49,000,000
1865	42,221,927	47,470,363	175,200,000	100,000,000

The aggregate amount of every decade from 1830 to 1860, and 5 years to 1865, was:—

	1830–40.	1840–50.	1850–60.	1860–5.
Francs....	701,172,568	760,993,908	3,009,800,000	763,700,000
Excess of Expenditure	60,581,154		Total Trade (35 years)	3,773,500,000

These figures show that Algeria has cost France £2,423,245 during the 35 years succeeding the conquest, and for which the commercial advantages have amounted to nearly £160,000,000.

The rate of importance of the countries trading with the colony will be found in the following statement:—

		Per cent.
France	For consumption	89·53
	„ re-exportation	3·52
Spain		2·01
Barbary States		1·77
Great Britain		1·46
Italy		0·72
Sweden and Norway		0·47
Austria		0.24
Turkey		0·09
Mexico		0·07
Greece		0·06
Russia		0·03
Germany		0·01
Other countries		0·02

The exports of Algeria have been exported at the following rate:—

	Per cent.
France	79·28
Great Britain	9·03
Spain	4·50
Italy	3·55
Barbary States	2·08
Belgium	1·17
Egypt	0·24
Portugal	0·12
Turkey	0·02
Other countries	0·01

Banks. The bank of Algeria has branches at Oran, Constantine, and Bone. The business transacted in 1865 amounted to £3,132,985, in 1866 £3,853,168, and in 1867 £3,900,132. The dividends of the head office on each share of 500 francs were for the same periods respectively 60, 62, and 63 francs.

ALGIERS, the capital of Algeria, on the Mediterranean coast. *Lat.* 36° 47′ 20″ N. *Lon.* 3° 4′ 32″ E. *Pop.* 52,455. *Industries.* Silks, stuffs, woollens, and small wares. AGRICULTURE OF THE PROVINCE. *Cereals.* Grain returns amount to 80,000 quarters. *Cotton.* Its cultivation is on a very limited scale. In 1867 only 50 acres were planted, producing 8,786 of the staple. *Flax.* 4,370 acres are under cultivation, producing about 2,512,838 lb. of linseed, 3,529,988 lb. of straw, and 210,653 lb. of flax. *Tobacco.* The amount produced in 1867 is not given, further than that it surpassed that of 1866 by 293,836 lb., valued at £6,783. The quantity exported in 1867 was 36,800 cwts. of raw and manufactured tobacco. *Oil seeds.* 1,750 acres of colza and other oil-producing plants returned about 9,680,000 lb. of seeds. *Olives.* The principal crop is that of Kabylia. 1105 mills are employed in expressing the oil. The amount exported is estimated at 64,000 cwts. *Vines.* The vine disease shows a tendency to disappear in Algiers. The superficies planted in 1867 were 19,377 acres, or 4,297 acres more than the previous year. This produced 880,000 imperial gallons of wine besides fruit. *Silk.* 95 persons engaged in rearing silkworms realized 7,656 lb. of cocoons in 1867, the average price of which was about 3*s.* 5*d.* per lb. *Forests.* In this province the area of forest land is 750,000 acres, or 7 per cent. of the entire superficies.

Imports. Chiefly cheese, flour, vegetables, coffee, sugar, building materials, wine, glass, silk, cotton, linen, and woollen manufactures; earthenware, cast-iron and steel, &c.

Exports. Sheep, leeches, silk, horns, cereals, hides, fruit, tobacco, oils, rags, ores, &c.

Duties. Raw and manufactured goods enter free; tonnage duties on foreign shipping has been abolished; the coasting trade is open to all nations; the custom-houses on the frontier have been abolished.

Shipping and Navigation. The following is a statement of the relative amount of tonnage of each nation trading with Algeria :—

	Per Cent.
French	85.25
Spanish	4.62
Italian	3.32
English	3.25
Norwegian	1.13
Swedish	1.09
Austrian	0.70
Portuguese	0.21
Greek	0.11
Barbary States	0.09
Mecklenburg	0.08
German	0.07
Roman	0.06
Dutch	0.02

Algorithen, an Arabic word, expressive of numerical computation.

Alicante, a seaport of Spain and capital of a province of the same name. *Lat.* 38° 20′ N. *Lon.* 0° 27′ W. *Pop.* 21,000. *Products.* Those of Valencia, such as corn, oil, silk, grass, soda, cotton and linen fabrics, wine, &c. *Imports.* Coal principally, the values of which are diminishing, as it is probable that the centre of Spain will soon be supplied with coal and coke from the mines of Belmez and Espiel, in the province of Cordova, a railway to connect this with the Andalusian line having just been finished. The following statement shows value of trade at this port for the years 1865–67.

	Ships.	Tons.	Value of Imports.	Value of Exports.
British Shipping.			£	£
1865	107	18,915	62,144	61,107
1866	108	27,295	51,854	33,593
1867	108	24,039	34,833	43,344
Spanish Shipping.				
1865	464	123,142	unknwn.	unknwn.
1866	448	98,298	"	"
1867	556	103,154	"	"
Other Nations.				
1865	225	49,563	199,717	104,632
1866	217	31,127	123,030	24,188
1867	107	30,863	76,143	28,406

The Mole, which has a fixed light 95 feet in height, has been so enlarged that vessels drawing 22 feet of water can freely discharge there.

Alicende, an European plant, from which flax is prepared and made into cloth.

Alidade, an instrument used for taking altitudes, distances, &c.

Aliquant Part, in arithmetic, is that number which cannot measure any other exactly without leaving some remainder.

Aliquot Part is that part of a number or quantity which will exactly measure it without any remainder.

Alkaline Salts, although divided into two kinds, the fixed and volatile, and the former into two species, vegetable and mineral, possess many properties in common. These are—1. In taste acrid and pungent. 2. A tendency to dissolve animal substances and reduce them to a gelatinous substance. 3. An attraction for acids, with a power of separating earths and metals from them. 4. They change the blue vegetable juices to green, the green to yellow, the yellow to orange, the orange to red, and the red to purple. 5. They unite with oils, and destroy or injure almost all kinds of colours; but can be put upon cloth. Hence their use in the process of bleaching, &c. *Vegetable* alkali, in the pure state, is of a white colour when dry, and very caustic to the taste. *Mineral* or *Fossil* alkali differs from vegetable in having less attraction for acids, in being more easily fusible by itself, and forming a more soluble compound with the vitriolic acid. *Volatile* alkali differs from the others in being unable to resist the fire, and being entirely resolvable into a permanently elastic fluid, called alkaline air. Its powers on colour are also considerably weaker than those of the fixed alkalies. When procured immediately by the distillation of any substance capable of yielding it, it is obtained in a state similar to that in which the alkalies are usually met with, viz.: half mild and half caustic. By exposing the liquid alkali to a great quantity of fixed air, we may at last have it perfectly mild and neutralised, in which state it appears as a white salt extremely volatile, though less so than the pure caustic alkali. From the following table may be seen the compounds resulting from the various combinations of the alkaline salts with the different acids :—

1. *Vegetable fixed Alkali, combined with*

Vitriolic acid	Form.	Vitriolated tartar.
Nitrous acid......		Nitre.
Marine acid		Sal digestious.
Acetous acid......		Terra foliata tartari.
Acid of Tartar....		Soluble tartar.
Acid of Borax .. Acid of Phosphorus, &c. .. Saccharine acid, &c.		Anomalous salts, whose properties have not been ascertained.
Aerial acid		Mild or aerated alkali.

2. *Fossil or Mineral fixed Alkali, combined with*

	Forms
Vitriolic acid	Glaubers salt.
Nitrous acid	Cubical nitre.
Marine acid	Common salt.
Acetous acid	A salt resembling terra foliata tartari, which does not deliquate.
Acid of Tartar	Rochelle salt.
Acid of Borax	Borax.
Acid of Phosphorus, &c. Saccharine acid, &c.	Unknown salts.
Aerial acid	Mild fossil alkali.

3. *Volatile Alkali, combined with*

	Forms
Vitriolic acid	Vitriolic ammoniac or Glauber's secret sal ammoniac.
Nitrous acid	Nitrous ammoniac, or volatile nitre.
Marine acid	Common sal ammoniac.
Acetous acid	Spiritus Mindereri.
Acid of Tartar	A salt which shoots into fine long crystals, and does not deliquate in the air.
Acid of Borax	An anomalous salt.
Acid of Phosphorus	Microcosmic salt, or essential salt of urine.
Saccharine acid, &c.	Anomalous salts.
Aerial acid	Volatile sal ammoniac, or salt of hartshorn

ALLEGEAS, or **ALLEGIAS**, is a mineral manufactured in the East Indies of two descriptions, one being of cotton, and the other from the fibre of herbs, somewhat similar to flax or hemp.

ALLEVEURE, a Swedish brass coin, value one halfpenny.

ALLEGATION, in arithmetic, is a rule or operation whereby questions are resolved relating to the mixture of divers commodities or ingredients together, with the value and effect thereof; being of two kinds, medial and alternate. Allegation medial shows what the mean price of a pound, ounce, &c., is worth when several quantities of several values are mixed together. Allegation alternate shows how much of various kinds of samples may be taken to make up any assigned quantity of a compound which shall be worth a price proposed.

ALLOCATION, the admitting or allowing of an article in an account.

ALLOY is the proportion of a baser metal mixed with a finer one. In coining, alloy is necessary, because (1) the mixture of the metals which when smelted from the mines are not perfectly pure; (2) the saving the expense it must otherwise cost if they were to be refined; (3) the necessity of rendering them harder by mixing some parts of other metals with them, to prevent the diminution of weight by wearing, in passing from hand to hand; (4) the melting of foreign gold or coin which is alloyed; (5) the charges of coinage, which must be made good by the profits arising from the money coined; (6) the duty belonging to the Sovereign on account of the power she has to cause money to be coined in her dominions. In estimating the alloy of gold it is by carats; and that of silver by pennyweights.

ALMADIE, a kind of canoe used on the Malabar coast.

ALMANACK, a table containing a calendar of days and months of the year, the rising and setting of the sun, the moon's age, &c. &c.

ALMENE, a weight used for weighing saffron on the Indian coast.

ALMOND, a measure for oil, containing four gallons and a half—Portuguese.

ALMONDS [Fr. *Amandes*, Ger. *Mandeln* Du. *Amandelen*, Sw. *Mandlar*, It. *Mandorle*, Sp. *Almeudras*], a fruit grown in warm countries, on a tree resembling the peach in leaf and blossom, and of two kinds, sweet and bitter. It is enclosed in a shell covered by a tough, cottony skin, and ripens in August. An oil drawn from this fruit is exceedingly useful for medical purposes. Bitter almonds are principally produced in Barbary—an inferior sort of sweet almond is also brought from thence; the other sorts are produced abundantly in Spain and elsewhere.

ALMONDS of crystal are used in ornamenting gaseliers, chandeliers, &c. &c., and take the name from the fruit to which they bear a resemblance.

ALMOND-FURNACE, among refiners, is that in which the flags of litharge left in refining silver are reduced to lead again by the aid of charcoal.

ALOES [Ger. Du. Da. and Sw. *Aloe*, Fr. *Aloes*, It. and Sp. *Aloe*, Rus. *Sabir*], the inspissated juice of the plant Aloe. There are three kinds to be met with:—

1. *Aloe perfoliata*. Socotorine aloes, from the island of Socotria, is of a glossy surface, clear, and, in the lump, is of a yellowish colour, inclining to a purple cast of red; but when reduced to powder it is of a bright golden colour. It is the purest, though it is seldom found genuine in this country. In taste it is bitter and aromatic, but disagreeable; the smell resembles myrrh.

2. *Aloe hepatica*. Hepatic Barbadoes, or common aloes, is also imported from the western coast of India. It is not so clear and bright as the preceding kind; it is also of a darker colour, more compact texture, and drier. Its smell is much stronger and more

disagreeable, the taste intensely bitter, with very little of the aromatic flavour of the socotorine.

3. *Aloe caballina*, fetid caballine, or horse aloes, is a coarser description, distinguished by its strong, rank smell, and used only for horses.

All the different sorts are gum resins, which contain more gummous than resinous parts.

Aloes Wood [Ger. *Aloeholz*, Du. *Aloëhout Paradyshout*, Da. *Aloetræ*, Sw. *Aloetra*, Fr. *Bois d'Aloes*, It. *Legno di Aloe*, Sp. *Aloe chino*, Port. *Pao de Aloes*, Rus. *Aloe derewo*] comes from China and several of the Indian islands. There are three kinds.

1. *Calabac* or *tambac*, the finest quality, is of a light, spongy texture, very porous, and its pores filled up with a soft and fragrant resin. Its scent is very fragrant, and its taste acrid and bitterish, but aromatic, and not unpleasant. It varies in colour: in some instances black and purple, others black and yellow, and sometimes yellow alone.

2 The *common* aloe wood comes next in value; it is less resinous, as its texture is denser and more compact than the other. It is in small fragments of a dusky brown colour, variegated with resinous black veins.

3. The *calambour* is light and friable, of a dusky green black and deep brown colour, and often mottled. It is used chiefly by cabinet-makers. The two first of these aloes are used in medicine as a cordial. A very fragrant oil may be produced from them by distillation.

Alphabet, in a mercantile sense, signifies the twenty-four letters which serve either as an index to contain the names of correspondents and customers, with references to the ledger, or to particularize the respective books of account.

Alphœnix, a description of barley-sugar, boiled, and afterwards poured upon a marble slab covered with oil of sweet almonds.

Altin, money used in Muscovy in accounts, of the value of three copeks, 100 of which make a rouble.

Aludels, amongst chemists, are bottomless earthenware pots, used in sublimation.

Alum is a white mineral salt, dug out of the earth, calcined, and washed in several pits of water. It is afterwards boiled, when the impurities subside, leaving a transparent liquor, which, being removed into a cooler, and some urine added to it, begins to gather into a mass; that is then taken out, washed, and melted over again, when it is fit for use. England, Italy, France, Hungary, and Sweden are the countries chiefly productive of alum. The best English alum, produced on the hills of Yorkshire and Lancashire, is extremely white, clear, and transparent, of an acid taste, leaving in the mouth a sense of sweetness, accompanied by a considerable degree of astringency. Roman alum is "considered as the best and purest quality of commercial alum, and is known by its reddish hue, derived from a slight film of sesquioxide of iron." Besides the mineral species of alum, there are the saccharine alum, burnt alum, and plomose alum, sold by chemists and druggists. "Alum is of great use in the arts, for preparing and separating skins, for mordants in calico printing and in dyeing, for glazing paper, for hardening and whitening tallow in candle-making, for clarifying liquors, and in medicines as an astringent and caustic." The kind in common use is potash alum, which consists of—

Alumina	10·82
Potash	9·94
Sulphuric acid	33·77
Water	45·47
	100·00

Alzenburger, a Rhine wine of a secondary quality, the produce of Breisig.

Ama is a term used for a wine measure, as a pipe, a cask, &c.

Amadow [Ger. *Zunderschwamm*, Fr. *Amadow*], a spongy excrescence growing on old trees, which comes from Germany as tinder or touchwood. It is prepared by being boiled, and when dried and beaten put into a strong lye containing saltpetre, after which it is placed in an oven to dry.

Amain, on board ship, is to lower the sails.

Amalgamation, the operation of making an amalgam, or mixing mercury with any metal. For the combination of any one metal with another, it is generally sufficient that one of them be in a state of fluidity. Mercury being always fluid, is therefore capable of amalgamation with other metals without heat; nevertheless, heat considerably facilitates the operation. To amalgamate without heat requires nothing more than rubbing the two metals together in a mortar; but the metal to be united with the mercury should be previously divided into very thin plates or grains. When heat is used—which is with some metals indispensably necessary—the mercury should be heated till it begins to smoke, and the grains of metal made red-hot before they are thrown into it. If it be gold or silver, it is sufficient to stir the fluid with an iron rod for a little while, and throw it into a vessel filled with water. This amalgam is used for gilding or silvering on copper, but is afterwards exposed to a degree of heat sufficient to evaporate the mercury. Amalgamation with lead or tin is effected by pouring equal parts of mercury into either of these metals in a state of fusion, and stirring all with an iron rod.

Aman, a species of cloth of a blue colour, made in the Levant.

Amber (*Succinum*) [Ger. *Bernstein*, Du. *Barnsteen*, Da. *Bernsteen Rav*, Sw. *Bernsten Raf*, Fr. *Ambre jaune*, It. *Ambre gialla*, Sp. *Ambar*, Port. *Ambar*, *Ambre*, *Alambre*, Rus. *Jantar*]. This is a pellucid and very hard inflammable substance of one uniform structure: a bituminous taste, very fragrant smell, and highly electric. It is contended that amber is a bitumen which, trickling into the sea from some subterraneous sources, and then mixing with vitriolic salts that abound in these parts, becomes congealed and fixed. Good amber is however found by digging a great distance from the sea, which renders it probable that it is a bitumen of the naphtha or petroleum kind hardened into its present state by a vitriolic acid or oil of vitriol. The natural colour of amber is a fine pale yellow, but it is often made white and sometimes black: in both cases it is rendered opaque by the admixture of extraneous bodies. The most frequent variation however from the yellow is into a dusky brown; sometimes it is tinged with metallic particles, and remains pellucid. The salt, oil, and tincture of Amber have been variously applied in medicine; but its mechanical uses for toys, beads, cabinets, and utensils, and the better sorts of varnishes, are of more importance.

In East Prussia, and especially in that part called the Samland, amber is found in abundance; and during the prevalence of certain winds is frequently thrown by the sea on the shore in large quantities; it is collected there, as well as fished for on the surf, as also dug out of the sand hillocks running along the sea coast. In these sand hillocks, regular beds of amber are found enclosed in a soil of blue clay which is to be met with at an average depth of one hundred feet in a thickness of twenty-five to thirty feet. It is stated that out of some diggings established in those parts, 4,500 lb. of amber were raised in the course of four months of the year 1869. Diggings of this kind exist at present in various spots of the Samland, more especially at Wangen Sassan, Groskuhren, Kleinkuhren, Kraxtepellen, Kreislacken, and Hubnicken. Besides these works, there are other establishments at Brusterort where amber is obtained by divers from the bottom of the sea, and at Schwarzort (near Memel), where it is raised by dredging for it at the bottom of the Curish Haff: the dredging establishment last mentioned has increased considerably in importance of late years, and at present about 80,000 lb. of amber are annually obtained by it.

The total amount of amber obtained during the year 1869 in all parts of the provinces of Prussia by the various means of collection is estimated at about 150,000 lb., the value of which may be taken at about 550,000 Prussian dollars.

The quantity collected (by fishing for it) in the sea and upon the shore is about equal to that raised by the digging and dredging works. According to the opinion of competent persons, the produce of the diggings could be increased considerably by working them upon a regular mining system.

Apart from the fact that no certain knowledge has hitherto been arrived at as to the actual extent of the amber fields in the blue clay, and that these fields exist most probably not only in the vicinity of the seacoast, but also in the interior of the Samland and even beyond that district and the frontiers of Eastern Prussia, it is most likely that below the stratum of clay to which the diggings are at present confined, there are other strata in which amber would be met with. This supposition is based upon the circumstance that considerable quantities of amber have been found amongst the soil washed away by the sea during heavy gales from those portions of the coastal sand hills which lie below the layer of blue clay first alluded to.

The chief seat of the retail amber trade is Dantzig; the wholesale trade is at present in the hands of only two or three firms in the province of Prussia. The working of the Prussian amber into mouth-pieces, beads, &c., is likewise carried on chiefly at Dantzig, but also in all large cities; of late a manufactory of amber wares has been established at Polangen, a small Russian town near Memel, and it is intended to open similar works at Konigsberg, Moscow, and at New York.

Amber is exported from East Prussia chiefly to Vienna, London, Paris, Moscow, and New York, in all of which cities the Prussian merchants keep agents who are supplied with stocks of this article, assorted according to the requirements of the place. Great progress has lately been made with regard to the sorting of the various kinds of amber. There are now no less than fifty distinct kinds, differing in size, colour, hardness, and clearness. It is owing partly to this circumstance, and partly to the growing extent of the demand, that an increase in the sale of amber continues to take place. The demand from South Germany, Russia, the Danubian Principalities, and in the East in general, as compared with the comparatively limited amount hitherto obtainable, will, it is thought, prevent any increase of production from acting prejudicially on the profitableness of the trade in this article. Considering, moreover, the almost entire absence of mineral products in this part of Prussia, and the importance of opening additional channels of employment for the inhabitants, the Konigsberg Chamber of Commerce strongly recommends the introduction of the system above alluded to, by which the amber diggings might be extended, and worked upon a regular mining principle.

AMBERADA, a description of sham amber, formerly used in the African trade.

AMBERGRIS [Ger. *Amber*, Fr. *Ambregris*, It. *Ambra-grigia*, Sp. *Ambar-gris*, Rus. *Ambra*] is now generally used in perfumery, though in some parts of Africa and Asia it is used as a spice in cookery. It is found floating on the sea, or in the abdomen of healthy sperm whales, and in pieces weighing from one ounce to one hundred pounds weight. The chief supplies are received from the Bahamas, and in smaller quantities from the Maldives, Brazil, and the Chinese coast. It is an ash-coloured, fatty, inflammable substance, rugged on its surface, and melts freely on being heated, when it emits a fragrant odour. The ash-coloured is the finest, and such pieces as are white, or are growing black, are particularly unpleasant held over the fire. Choose those that have an agreeable odour, and are in colour entirely grey outside, with small dark spots encircled in grey inside. The price of it at present is 26*s.* per ounce, but as it is becoming very scarce, that figure is certain to rise much higher.

Amber-Seed [Fr. *Ambrette*, Ger. *Bisamkorner*, Du. *Muskuszaad*, Da. *Desmerkorn*, Sw. *Desmanskorn*, It. *Granelli d'ambretta*, Sp. *Ambarilla*, Port. *Ambaralhi*], a seed used in perfumery, brought from Egypt and Martinico.

Amboyna, a fancy wood used by cabinet-makers, imported from Amboyna and Ceram. It is of various colours and shaded.

Ambulant, the term given in Amsterdam to brokers or agents who have not been sworn before a magistrate.

Ameas Seed [Fr. *Semence d'ammi*, Ger. *Ammysamen*, It. *Ameos Ammi*, Sp. *Ameos Ammi*] is an aromatic from the seed of a fruit resembling camphor in taste.

Amemoscope, a machine which indicates from what point of the compass the wind blows. This is found by means of an index moving about an upright circular plate, the index being turned by an horizontal axis, and the axis by an upright staff, at the point of which is the fane moved about by the wind.

Amethyst [Ger. *Amethyst*, Du. *Amathiststeen*, Da. *Ametist*, Sw. *Ametist*, Fr. *Amethyste*, It. *Amatista*, Sp. *Ametisto*, Port. *Ametista—Ametisto*], a gem of a purple colour, which seems composed of a strong blue and a deep red, and according as either of those prevails, affording different tinges of purple, sometimes approaching to a violet, and sometimes even fading to a pale colour. Amethysts are generally of a purple colour, and may at any time be easily made so by putting them into the fire, in which pellucid or colourless state they only want the hardness not to be distinguished from diamonds. The amethyst is scarcely inferior to any of the gems in the beauty of its colours, and, in its purest state is of the same hardness and at least of equal value with the ruby or sapphire. It is found of various sizes, from the bigness of a small vetch to an inch and a half in diameter, and often much more than that in length. This precious stone is found in the East and West Indies, and in several parts of Europe, some of the first specimens of the Oriental ones being so hard and bright as to equal any of the coloured gems in value. However, by far the greater number of amethysts fall infinitely short of these, as all the European ones, and not a few of those brought from the East and West Indies, are very little harder than common crystal.—*Kauffmann.*

Amfuhr, a secondary Moselle, the produce of Burg on the Rhine.

Amianthus or **Earthflax**, a fibrous, flexile, elastic mineral substance, consisting of short, abrupt, and interwoven filaments. It is found in Germany in the strata of iron ore, sometimes forming veins, and an inch in diameter; also in Crete and Cyprus; in Tartary; Namur, in the Low Countries; in Egypt; in the mountains of Arcadia; in Corsica, Wales, Scotland, France, and Russia. The amianthus may be split into threads and filaments from one to ten inches in length, very fine, brittle, yet somewhat tractable, silky, and of a greyish colour.

Ammerschwir, a rich and luscious straw wine of the first class, produced in the Haut Rhin.

Ammonia, *Volatile Alkali*, or Spirits of Hartshorn, a pungent volatile substance, of great importance and extensive use, which is formed during the putrefactive fermentation of animal matter. When pure, it is a gaseous body composed of three equivalents of hydrogen and one of azote: sp. gr. ·590; but in medicine and the arts it is generally used either in solution in water or in combination with other substances.

Liquid Ammonia or Hartshorn is an aqueous solution of ammonia, prepared either by passing the gas as it is formed directly into water, or by distillation from sal ammoniac, burnt bone, and water. In the former case, the sp. gr. is ·880, in the latter ·954 It is limpid, colourless, very volatile, has a pungent smell and a caustic taste, and is one of the most useful stimulants in the *materia medica.*

Acetate of Ammonia, or Spirit of Mondereras, is prepared by adding sesqui-carbonate of ammonia to dilute acetic acid. It has a sweetish bitter taste, and is employed externally as a refrigerant, and internally as a diaphoretic.

Carbonate of Ammonia. The carbonate of ammonia may be obtained by uniting one volume of carbonic acid gas with two volumes of ammonial gas. It is a dry, white, volatile powder, and is used as a stimulant, called Spirit of Sal Volatile. The sesqui-carbonate of ammonia is obtained by sublimation from a mixture of muriate or sulphate of ammonia and chalk, and usually occurs in cakes broken out of the subliming vessel. When fresh, it is of a crystalline texture, semi-transparent and hard, odour pungent and taste penetrating. It is extensively used in chemical preparations. In medicine it is employed as a stimulant, and is usually called smelling salts.

Muriate of Ammonia, or Sal-Ammoniac [Fr. *Sel Ammoniac*, Ger. *Salmiak*, It. *Sale Ammoniaco*], was originally procured from Egypt, where it was made from the soot of camels' dung. It is now, however, prepared in abundance in this country by decomposition of the ammonial fluid given off during the preparation of coal gas, also by a complicated process from bones and other refuse of animal substances containing its ingredients. It is likewise found native at Etna and Vesuvius, in some of the Tuscan lakes, and in Persia, Bucharia, &c. As generally obtained, it is in large cakes of a semi-circular form, translucent and colourless, with a sharp saline taste, but no smell. Sal-ammoniac is extensively employed in the arts. It is used in preparing aqua regia; in soldering some of the metals; in tinning iron and copper; in the preparing of dyes; also in various chemical manufactures. It is exported in considerable quantities to Russia and other parts of the Continent, and to the United States.—*Waterson.*

AMMONIACUM [Ger. Du. Da. and Sw. *Ammoniack*, Fr. *Gomme Ammoniaque*, It. *Gomma Armoniace*, Sp. *Goma Armoniaca*], or AMMONIAC, a concrete, gummy, resinous juice, brought from India, usually in large masses, composed of lumps or *tears*, of a yellowish-white colour. Specific gravity 1·207. The plant producing it grows in Abyssinia and Persia. Ammonia has a nauseous sweet taste, followed by a bitter one, and a smell resembling that of galbanum, but more grateful.

AMOMI SEED [Ger. *Amömlein*, Du. *Amomizaad*, Da. *Amomfrö*, Sw. *Amomfrö*, Fr. *Amomes*, It. *Amomo*, Sp. *Amomo*, Port. *Amomo*]. These are brown grains brought from the East Indies, of a hot, aromatic smell and taste, somewhat resembling that of cinnamon, cloves, and pepper. They are of the size of a chick pea, and grow on a tree which has a red, odoriferous wood, and bears a kind of berry or pod resembling grapes. These berries contain the seed, which ought to be light-coloured, heavy, and well filled. If the berries are light, with black seeds and shrivelled, they are worthless.

AMOY is one of the open ports in China. *Population.* About 250,000. *Principal Exports.* Tea, sugar, nankeens, tobacco, imitation and real gold leaf, vermicelli. *Principal Imports.* Opium, cotton, cotton goods, metals, beans and peas, bean cake, rice, &c. (*See* Chinese Treaty Ports.)

AMPHORA, the largest liquid measure used formerly at Venice, containing four bigorzas, each bigorza being four quarts, or an English gallon.

AMPLIATION signifies the duplicate which is taken or given of a receipt, an acquittance, or an account, or the like. Thus it may be said, to sign a copy by ampliation, which is to sign a duplicate therefore.

AMSTERDAM, the metropolis of the Netherlands, formerly called the "Venice of the North," is situated at the confluence of the Amstel with the Y in N. Holland. *Lat.* 52° 22′ N. *Lon.* 4° 53′ S. *Pop.* 270,000. This city is one of the leading centres of trade in Europe. The improvements carried out in late years in the erection of public buildings, in opening up new streets, and in widening old thoroughfares, have given to it quite a modern aspect. Its harbour is commodious and secure, and there is sufficient depth of water in the ship canal between the city and the Helder to admit large vessels to the quay sides, where cargo is discharged. At present there are new works in progress, which will increase the accommodation offered to shipping: and these are a large basin with locks accessible from the North Sea ship canal—a deep and wide passage also in course of construction—a new breakwater, embracing an area of 200 acres, and a dam and lock at the entrance to the bar. The three sections of this important work are to be completed in 1876. *Industries.* Although possessing numerous manufactures, Amsterdam is more distinguished for its trade. Woollen and cotton fabrics of various kinds are wrought and dyed here. There are sugar refineries, metal foundries, chemical works, and lace, velvet, damask, stuff, galloon, and carpet manufactures. *Import Trade.* All kinds of European, Asiatic, and American produce. The following are the leading articles:—

Coffee. East Indian and Brazilian.

COMPARATIVE STATEMENT OF THE IMPORTS OF COFFEE IN 1866–1869.

		1866.		1867.		1268.		1869.	
		Bags.	Casks.	Bags.	Casks.	Bags.	Casks.	Bags.	Casks.
Netherlands Trading Compy.		846,821	..	1,018,270	..	883,530	..	719,163	..
Private Merchants......	East Indies	239,228	1,316	207,293	1,273	246,751	1,374	201,819	1,038
	West Indies	13,395	149	20,404	55	26,630	390	52,375	374
Totals		1,092,444	1,465	1,245,967	1,328	1,156,911	1,764	973,357	1,816

STATEMENT OF THE STOCK ON HAND ON THE 31st DECEMBER 1866–1869.

		1866.		1867.		1868.		1869.	
		Bags.	Casks.	Bags.	Casks	Bags.	Casks.	Bags	Casks.
Netherlands Trading Compy.		187,889	..	264,581	..	265,385	..	222,238	..
On Warrants		114,360	..	139,275	..	151,741	..	218,269	..
Private Merchants......	East Indies	22,200	300	23,500	..	45,600	..	43,400	..
	West Indies	12,300	..	10,000	..	15,600	..	40,400	..
Totals		336,749	300	437,356		478,326	..	553,667	..

Amsterdam.

Tea. Ordinary China and Java Congo. The importations are made direct. The business done in China tea with England is inconsiderable. The imports during the 5 years from 1865 to 1869, inclusive, were:—

Qualities.	1865.	1866.	1867.	1868.	1869.
China Tea ¼ Chests..	15,877	17,574	21,087	7,870	19,834
Java ,, ,,	28,364	32,866	28,953	28,770	30,047
Japan ,, ,,	18	..	..	202	..
Totals........	44,259	50,440	50,040	50,842	49,881

Sugar is imported from Java, Surinam, Cuba, and Brazil, as well as beetroot sugar from Belgium and Bohemia, and is partly consumed in the country, and partly re-exported to Prussia, Sweden, Belgium, and France.

STATEMENT OF THE IMPORTS OF RAW AND THE EXPORTS OF RAW AND REFINED SUGAR DURING FIVE YEARS 1865–1869.

	1865. Nett lb.	1866. Nett lb.	1867. Nett lb.	1868. Nett lb.	1869. Nett lb.
Imports raw..........	115,300,000	116,300,000	108,200,000	128,880,000	118,700,000
Exports raw..........	27,580,000	15,170,000	16,520,000	23,437,000	35,841,000
Exports refined	74,913,800	82,320,200	77,989,200	85,254,500	92,782,500

The Netherlands pound is equivalent to 2 lb. 3 oz. avoirdupois.

STATEMENT OF THE QUALITIES AND QUANTITIES OF REFINED SUGAR EXPORTED FROM 1865 to 1869.

Qualities.	1865.	1866.	1867.	1868.	1869.
Melis and Lumps	72,986,000	81,123,500	76,871,600	83,848,400	90,570,000
Candy	1,038,800	726,000	568,300	468,609	411,500
Bastard	501,000	377,700	549,300	937,500	1,801,000
Treacle	388,000	100,000	....	....	....
Totals........	74,913,800	82,327,200	77,989,200	85,254,500	92,782,500

Tobacco, as may be seen from the following comparative statement, is an important ite in the receipts:—

COMPARATIVE STATEMENT OF THE IMPORTS OF THE VARIOUS KINDS OF TOBACCO DURING FIVE YEARS.

	Hogsheads.			Packages.							
	Maryland.	Kentucky.	Virginian.	Java.	Porto Rico.	Rio Grande	Havana.	Cuba.	Seedleaf.	St. Domingo.	Cavendish.
In 1865........	4,903	378	..	61,087	2,523	..	210	..	225	..	..
,, 1866........	8,217	297	106	53,862	75	..	109	..	71	45	..
,, 1867........	9,642	141	55	58,923	..	2,050	250	48	200	321	..
,, 1868........	9,341	55	72	59,401	..	..	91	..	100	..	140
,, 1869........	6,026	78	355	56,387	..	..	45	..	..	72	..

Amsterdam.

Cotton. The trade at this port is very large. The quantities and qualities imported during five years, 1865–69, were as follows:—

Qualities.	1865.	1866.	1867.	1868.	1869.
	Bales.	Bales.	Bales.	Bales.	Bales.
North America	106	3,155	6,881	17,427	15,116
Surinam and Nickerie	287	303	348	463	408
Surat, Bengal, and Tinnevelly	12,066	25,634	18,808	35,788	48,900
Netherlands East Indies	339	..	..	108	..
Japan	551	215	..	..	..
China	537	293	177	..	..
Levant	214	11	..	463	..
Brazil	..	267	1,182	197	1,649
Smyrna	..	..	74	280	37
Totals	14,100	29,878	27,470	54,726	69,110

IMPORTS OF GRAIN FOR THE YEARS 1865 TO 1869.

Countries.	Wheat.					Rye.				
	1865.	1866.	1867.	1868.	1869.	1865.	1866	1867.	1868.	1869.
	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.
North America	..	..	..	..	433	..	372	194	..	..
Russia	..	6	325	106	095	3,736	10,829	11,275	11,820	7,751
Prussia	7,516	5,657	1,681	3,393	4,536	1,799	795	241	114	1,682
Hamburg	295	652	769	318	..	..	125	..	..	..
Great Britain	14	..	38	5	..	..	..		43	160
Denmark	156	219	165	23	..	562	..	..	..	..
Hanover	65	88	24	..	..	..	..	..	..	..
Mecklenburg	..	..	..	..	..	73	..	..	..	..
Oldenburg	..	..	..	..	..	..	..	..	..	..
Turkey	..	..	..	..	..		831	795	75	7,383
Austria	..	..	..	..	..	10,399	..	..	..	..
France	..	..	..	..	..	295	63	..	269	34
Bremen	..	..	..	..	..	464	..	..	..	..
Sweden	48	..	..	..	..	..	..	..	..	..
Miscellaneous	..	..	35	..	534	50	..	..	..	119
Totals	8,094	6,617	3,037	3,845	5,598	17,378	13,015	12,514	12,321	17,129

Countries.	Barley.					Buckwheat.				
	1865.	1866.	1867.	1268.	1869.	1865.	1866.	1867.	1867.	1869.
	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.	Lasts.
North America	..	..	..	..	..	..	..	..	..	..
Russia	..	..	163	..	..	..	..	..	..	..
Prussia	240	1,071	1,121	1,001	1,169	87	..	23	75	286
Hamburg	437	173	730	358	381	120	375	816	14	35
Great Britain	..	..	..	..	..	..	..	12	..	..
Denmark	611	135	617	55	301	43	43	283	..	..
Hanover	..	..	..	..	..	..	179	40	..	..
Mecklenburg	..	..	..	..	..	..	..	..	..	..
Oldenburg	..	..	..	..	..	28	..	..	..	..
Turkey	15	..	..	..	..	..	..	..	..	..
Austria	..	..	..	..	..	..	..	..	..	..
France	..	..	..	..	..	44	762	1,463	256	45
Bremen	110	55	47	..	..	..	..	..	..	..
Sweden	493	..	106	..	..	..	..	..	..	..
Miscellaneous	..	..	..	..	49	..	..	..	..	..
Totals	1,906	1,434	2,784	1,414	1,900	322	1,359	2,637	345	366

Amsterdam.

Shipping. Besides an extensive trade carried on by sailing vessels, there is a large steam traffic between this port and foreign countries, the extent of which may be seen from the following returns :—

COMPARATIVE STATEMENT OF THE DEPARTURES OF NETHERLANDS AND FOREIGN STEAMERS FROM AMSTERDAM DURING THE YEARS 1865–69, AND SHOWING THE PORTS WHITHER THEY WERE BOUND.

Bound to.	1865.						1866.					
	Netherlands		Foreign.		Totals.		Netherlands.		Foreign.		Totals.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
Great Britain .	..	..	126	42,411	126	42,411	2	682	141	49,816	143	50,498
Prussia ..	51	16,990	..	..	51	16,990	55	18,317	3	1,551	58	19,868
Hamburg ..	69	20,794	..	..	69	20,794	63	20,414	1	735	64	21,149
France ..	16	4,741	..	..	16	4,741	18	5,170	..	..	18	5,170
Mediterranean	11	6,557	..	..	11	6,557	18	10,924	3	2,268	21	13,192
Russia ..	11	2,890	..	..	11	2,890	6	1,894	..	..	6	1,894
Sweden ..	7	2,652	1	419	8	3.071	7	2,006	1	530	8	2,536
Denmark ..	5	1,360	..	..	5	1,360	3	614	..	..	3	614
Bremen ..	3	679	..	..	3	679	2	361	..	..	2	361
Mecklenburg..	..	..	..	..	..	..	1	253	..	..	1	253
Italy	1	533	..	..	1	533	..	..	1	530	1	530
Belgium ..	..	..	1	556	1	556	..	..	2	562	2	562
Egypt.. ..	..	..	1	169	1	169	..	..	..	..	..	..
Coasting ..	1	275	..	..	1	275	1	116	..	..	1	116
Totals ..	175	57,471	129	43,555	304	101,026	176	60,751	152	55,992	328	116,743

Bound to.	1867.						1868.					
	Netherlands.		Foreign.		Totals.		Netherlands.		Foreign.		Totals.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.	Vessel	Tons.	Vessels.	Tons.	Vessels.	Tons.
Great Britain .	1	341	146	52,173	147	52,514	12	3,969	181	68,182	193	72,151
Prussia ..	60	20,806	..	..	60	20,806	55	18,436	..	..	55	18,436
Hamburg ..	64	19,281	..	..	64	19,281	60	19,334	..	..	60	19,334
France ..	18	4,914	..	..	18	4,914	17	5,010	..	..	17	5,010
Mediterranean	17	10,920	..	..	17	10,920	25	15,930	6	4,227	31	20,157
Russia ..	12	5,604	..	..	12	5,604	12	5,208	..	..	12	5,208
Sweden ..	8	2,091	..	..	8	2,091	7	1,637	..	..	7	1,637
Denmark ..	1	305	..	..	1	305	1	597	..	..	1	597
Bremen ..	1	305	..	..	1	305	1	189	..	..	1	189
Mecklenburg..	..	..	..	..	..	..	..	..	..	..	..	..
Italy	..	..	..	..	..	..	..	..	..	..	..	..
Belgium ..	..	..	..	..	..	..	..	..	1	468	1	468
Egypt.. ..	..	..	..	..	..	..	..	..	..	..	..	..
Coasting ..	1	172	1	735	2	907	..	..	..	..	..	..
Totals ..	183	64,739	147	52,908	330	117,647	190	70,310	188	72,877	378	143,187

Amsterdam.

Bound to.	1869.					
	Netherlands.		Foreign.		Totals.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
Great Britain	3	1,227	163	62,529	166	63,756
Prussia	44	14,863	2	1,146	46	16,009
Hamburg	56	21,016	1	510	57	21,526
France	20	5,267	..	..	20	5,267
Mediterranean	21	13,194	..	..	21	13,194
Russia	12	6,152	..	..	12	6,152
Sweden	2	725	..	..	2	725
Denmark	4	1,852	..	..	4	1,852
Bremen	..	..	..	..	..	..
Mecklenburg	..	..	..	..	..	..
Italy	..	..	..	..	..	..
Belgium	..	..	1	726	1	726
Egypt	..	..	..	..	..	..
Coasting	..	..	..	..	..	..
Totals	162	64,296	167	64,911	329	129,207

COMPARATIVE STATEMENT OF THE ARRIVALS OF NETHERLANDS AND FOREIGN VESSELS AT AMSTERDAM DURING THE YEARS 1865-69, DISTINGUISHING SAILING VESSELS FROM STEAMERS.

Nationality.	Sailing Vessels.		Steamers.		Total.	
	Vessels.	Tons.	Vessels	Tons.	Vessels.	Tons.
1865.						
Netherlands	654	136,461	176	58,207	830	194,668
Foreign	708	161,789	131	44,862	839	212,651
Totals........	1,362	304,250	307	103,069	1,669	407,319
1866.						
Netherlands	643	140,113	179	61,773	822	201 ,886
Foreign	628	161,392	154	56,816	782	218 ,208
Totals........	1,271	301,505	333	118,589	1,604	420,094
1867.						
Netherlands	586	133,970	184	65,180	770	199,150
Foreign	546	139,926	150	53,899	696	193,825
Totals........	1,132	273,896	334	119,079	1,466	392,97
1868.						
Netherlands	538	136,780	189	69,755	727	206,535
Foreign	538	146,263	200	78,001	738	224,264
Totals........	1,072	283,043	389	147,756	1,465	430,799
1869.						
Netherlands	451	128,186	159	63,304	610	191,490
Foreign	594	173,914	170	59,925	764	233,839
Totals........	1,045	302,100	329	123,229	1,374	425,329

Money. The gulden = 1*s.* 8*d.*

Weights and Measures. Poud = 2·2 lb. avoir. Mud of potatoes = 2¾ imp. bush. Mud of coal = 2¾ imp. bush., about 10·8 muden to the ton. Last of grain = 10½ imp. quarts. Ranne = 1¾ imp. pints, about 4½ to the imp. gallon. Cubic ell = 35·3 cubic feet.

Postal communication twice daily *via* Belgium: letters under ½ oz., 3*d.*; under 1 oz., 6*d.*; every additional ½ oz., 3*d.* *Via* France, daily mail, ¼ oz., 6*d.*; under ½ oz., 1*s.*; under 1 oz., 1*s.* 6*d.*

AMSTERDAM Exchange Bourse

London 11·95 florins and cts. for £1 sterling.
Frankfort, 99¾ florins and cts. for 100 z. v. florins.
Genoa, 47½ florins and cts. for 100 lirie.
Hamburg, 35 florins and cts. for 40. marks banco.
Leghorn, 47½ florins and cts. for 100 lire.
Lisbon, 46 florins and cts. for 40 crusados of 400 reis.
Madrid, 2.42 florins and cts. for 1 duro.
Naples, 79¾ florins and cts. for 40 ducats del regno.
Paris, 55¾ florins and cts. for 120 francs.
Petersburg, 1.92 florins and cts. for 1 silver ruble.
Vienna, 36½ florins and cts. for 30 florins.

Usance of bills from England, 1 month's date.

ANACOSTE, a kind of woollen diaper, manufactured in Holland for the Spanish market. The piece is one ell broad, and twenty ells long.

ANAGROS, a measure for corn, containing about six bushels Winchester measure, used in some parts of Spain.

ANALYSIS, in chemistry, the reduction of mixed bodies into its principles, which is effected by heat and mixture. *Analysis* of powers is the operation of resolving them into their roots, otherwise called evolution.

ANATA or **ANNOTTO** [Ger. and Rus. *Orlean*, Du. *Oleaan*, *Rokoe*, Da. *Orleans*, Sw. *Orleana*, Fr. *Roucou*, It. *Oriana*, Sp. *Ochioto*, Port. *Oruca*], a kind of red dye brought from the West Indies. It is procured from the pulp of the seed capsules of a tree called Bixa, in South America. The Anata is usually prepared thus: the contents of the fruit or capsule are thrown into a wooden bowl, where as much water is poured on them as is necessary to suspend the red matter or pulp. When the seeds are left quite naked, they are taken out, and the wash is left to settle. The water is then poured off, and the sediment dried by degrees in the shade; after which it is made into balls or cakes for exportation.

ANATOCISM signifies the acceptance of a usurious interest for loans of money.

ANATRON or **NATRON**, a kind of native salt, extracted from the Nile by evaporation and crystallization. It is a little acrid and alkaline to the taste.

ANCHOR, in shipping affairs, is a very large and heavy iron instrument, with a double hook at one end, and a ring at the other, by which it is fastened to a cable. It is cast into the bottom of the sea or rivers, where taking its hold it keeps ships from being drawn away by the wind, tide, or current. There are several kinds of anchors. 1st. The sheet anchor, which is the largest, and is never used but in violent storms to prevent the ship from being driven on shore. 2nd. The two bowers, which are used for ships to ride in a harbour. 3rd. The grapnel. The iron of which anchors are made ought neither to be soft nor too brittle. In order to give them a proper temper, it is the practice to join brittle with soft iron together. The anchor is said to be *a-peak* when the cable is perpendicular between the hawse and the anchor. An anchor is said *to come home* when it cannot hold the ship. An anchor is *foul* when, by the turning of the ship, the cable is hitched about the fluke. To shoe an anchor is to fit boards upon the flukes, that it may hold fast in soft ground. When the anchor hangs right up and down by the ship's side, it is said to be *a cock bell*, upon the ship's coming to an anchor. *Riding at anchor* is the state of a vessel moored, fixed by her anchors. *Dropping an anchor* imports the letting it down into the sea. In some cases, it is necessary to drop two anchors opposite each other; one to keep the ship firm against the tide or flow, the other against the ebb. *Weighing anchor* is the process of raising it on board when the vessel is on the eve of sailing.

ANCHOR, a measure of brandy, &c., containing ten gallons.

ANCHORAGE, or anchoring ground, is a place fit to hold the anchor of a ship, so that she may ride in security. The best ground for that purpose is stiff clay or hard sand, and the best riding at anchor is when a ship is landlocked and out of the tide. Anchorage also means a duty paid to the authorities of the haven where the vessel is at anchor.

ANCHOVIES [Ger. *Anschovis*, Du. and Sw. *Ansjovis*, Da. *Anoios*, Fr. *Anchois*, It. *Acciughe*, Sp. and Port. *Anchovas*, Rus. *Antshofischi*], the name of a small sea-fish common in the Mediterranean. The anchovy is so like the common sprat that the latter is often pickled and sold for the former. The fishery is carried on chiefly in the night-time, when a light being put on the stern of the vessels, the fish flock round, and are caught in the nets. The anchovy is much used in sauces, from the excellence of its taste.

ANCHUSA, also called Alcanna, Alkanet. The root only of this plant is used: it comes principally from the Levant. The root is externally of a red colour, and white within, with little blue bands, and being rubbed on the hand, tinges it of a vermilion colour. As the colour for the sake of which it is used lies in the bark, the smaller roots are to be preferred. They are chosen new, clean, and dry, yet so pliable as not to be brittle.

Ancony, in the iron mines, a bloom wrought into the figure of a flat iron bar, about three feet long, with a square rough knob at each end.

Andaman Islands are Indian islands situated in the east part of the Bay of Bengal, between *Lat.* 10° 30', and 13° 40' N., and *Lon.* 92° 50' E. *Pop.* 3,000. Of no commercial importance. The soil is suitable for the cultivation of cotton, and the large number of economic plants of value which flourish in such a climate. The first clearing of the land would be unhealthy, as it always is in tropical climates, but the insalubrity would rapidly disappear with clearing and cultivation. The aborigines are few in number, and found only on the coast.

Angelica [Ger. *Angelika*, Fr. *Angelique*, It. and Port. *Angelica*] is a plant of many virtues, being stomachic, cordial, alexipharmic; of great use in malignant pestilential fevers, in all contagious distempers, &c. It is a large umbelliferous plant common in the United Kingdom, and of a fragrant, aromatic smell. Its taste is bitter. The root, stalks, leaves, and seed are used.

Anglesey, an island, a county of Wales, in the Irish Sea, finely wooded in several parts, and fertile in grass and corn. It is connected with the mainland by a tubular bridge, which crosses the Menai Straits. *Pop.* 50,919. *Minerals.* Copper and sulphur principally; lead ore, silver, and green marble are also found here. *Towns.* Beaumaris, Amlwch, and Holyhead. *Area*, 193,453 stat. acres. Occupiers of land, 3,312. Average extent held by each, 42 acres. Acreage under crop of all kinds, 138,298 acres.

Under Corn Crops. Wheat, 1,817 acres; barley or corn, 6,178 acres; oats, 24,717 acres; rye, beans, and peas, 124 acres. Total, 32,836 acres in 1870, against 32,859 acres in 1869.

Green Crops. Potatoes, 5,047 acres; turnips, 5,286. Mangold, carrots, &c., in all 10,751 acres. Clover, &c., 36,362 acres. Permanent pasture, 57,241 acres.

Live Stock. Horses, 6,551; cattle, 37,432, sheep, 46,780; pigs, 14,676. Railway communication, London and N. Western.

Angostura or **Cusparia Bark**, in the materia medica, is a useful tonic, procured from the stem and branches of a species of *Galipea*. It has a strong, bitter flavour, and its odour is unpleasant.

Angaria, the water melon, a fruit cultivated in Spain, Portugal, Italy, and in other warm climates of Europe, as well as in Africa, Asia, and America, where its cooling quality is highly esteemed.

Anil, the shrub from whose leaves and stalks indigo is prepared.

Animals, Market Price of Rare. Jackal, £2; hyæna, £15; paradoxuris, £2; ichneumon, £12; grison, £2; coali, £1 10*s.*; brown bear, £5; Himalayan bear, £12; black gaya, £20; Japanese deer, £10; hog deer, £5; Vulpine phalangers, £1 5*s.*; short-headed phalangers, £1; black-faced kangaroo, £15; red kangaroo, £25; yellow-footed rock kangaroo, £5; Jerboa kangaroo, £1; Derbian wallaby, £3; Bennett's wallaby, £5.

Anime is a kind of gum or resin used in perfumes, distinguished by the names of the eastern and the western: the latter distils on an incision made in a tree called *courbat*, frequently found in South America, which is transparent, of a very agreeable smell, and of a colour like frankincense; the former has three distinctions: the white sort; a blackish kind, like myrrh; and a pale sort, which is dry and resinous. This gum is of use in pharmacy.

Aninga, a root which grows in the Antilles Islands, and is not unlike the China plant. It is used by some sugar-bakers for refining sugar.

Anise, a greyish wood, brought from the East Indies in thick logs, and called anise upon account of its scent, which is like that of the plant of the same name. The anise wood is not only used in inlaid work and turnery ware, but the seed is sold for flavouring tea liquor, &c. This seed, which is enclosed within a very hard and very thick, small pod, resembles that of the coloquintida, except only that it is of a tanned and shining colour and of a pretty good scent.

Anker, a liquid measure. The English anker contains 8¼ imp. gall. The Scotch anker 7½ imp. gall. Amsterdam, 8¼. Copenhagen, 8¼ imp. gall.

Anna, a small coin current in India, of the value in English money of three halfpence.

Annabasses, a coarse kind of blanketing made for the Guinea Coast.

Annuitant, a person who has an annuity.

Annuities, periodical payments of money amounting to a fixed sum in each year, and continuing for a certain period to be determined by a particular event, as on the failure of a life, or for an indefinite term; which latter are called perpetual annuities.

The Postmaster General is empowered to grant Immediate or Deferred Annuities "of not more than £50 on the lives of persons of either sex, and of the age of 10 years and upwards." In this case the annuitant has direct Government security.

The sums to be charged for the purchase of Immediate Annuities will vary with the age and sex of the person on whose life the annuity is to depend:—

	£	s.	d.
A man aged 65 can purchase an Immediate Annuity of £10, payable half-yearly, for	88	18	4
A woman of the same age can purchase a like annuity for	103	16	8
A man aged 70 can purchase an Immediate Annuity of £10, payable half-yearly, for	73	3	4
A woman of the same age can purchase a like annuity for	84	19	2

The sums to be charged for the purchase of Deferred Annuities, or Deferred Monthly Allowances, will vary with the age and sex of the person on whose life the annuity or monthly allowance is to depend; and with the length of the term for which the annuity is deferred (or, in other words, with the number of years which are to pass before the commencement of the annuity), and with the conditions of the contract as to the mode of purchase, mode of payment, and return or non-return of purchase money.

When the condition of the contract is to be that no part of the purchase money shall, in any event, be returned:—

	£	*s.*	*d.*
A man aged 30 may purchase a Deferred Annuity of £10, to commence on his reaching the age of 60, and to be payable half-yearly, either by an immediate payment of	21	3	4
Or by an annual payment, until he reaches the age of 60, of......	1	8	4
A woman of like age may purchase a like annuity by an immediate payment of	32	8	4
Or an annual payment, up to 60, of	1	17	6

And a man aged 30 may purchase a Deferred Allowance of £2 7*s.* 3*d.* per month, to commence when he reaches the age of 60, by a payment until he reaches that age of 8*s.* per month; and a woman of like age may, by a like payment of 8*s.* per month, purchase a Deferred Allowance of £1 16*s.* 7*d.*, to commence when she reaches the age of 60.

When the condition of the contract is, that in the event of the death of the person on whose life the Annuity or Allowance is to depend before the commencement of the annuity or allowance, the purchase money is to be returned to his representatives; and that if the purchaser at any time before the commencement of the annuity or allowance is unable to continue, or wishes to discontinue, the purchase, the purchase money shall be returned to him; the price charged will be higher than when no such condition is made.

	£	*s.*	*d.*
Under this condition, a man aged 30 may purchase a Deferred Annuity of £10, to commence when he attains to 60 years of age, and to be payable half-yearly, either by an immediate payment of	40	9	2
Or by an annual payment, until he attains to 60 years, of	2	0	10
And a woman of like age may purchase a like annuity either by an immediate payment of	47	0	10
Or by an annual payment of	2	7	6

And a man aged 30 may purchase an allowance of £1 14*s.* 2*d.* per month, to commence when he attains the age of 60 years, by a monthly payment of 8*s.*; and a woman of like age, by a like payment, until she reaches the age of 60 years, may purchase an allowance of £1 9*s.* 4*d.* per month.

As the tables may be procured at any post-office, together with the Post-office regulations in full respecting annuities, there is no necessity for finding space for them here.

ANNUL, in book-keeping, signifies to render an article null by making it of no import in the account. Instead of erasing a sum that has been carried by mistake to the credit side of an account, the account is debited for the same sum; and, on the contrary, if a sum has been placed to the debtor side of an account, the same sum is placed to the credit of the account.

ANTEDATE, a spurious or false date prior to the true date of a bond, bill, &c.

ANTHRACITE or BLIND COAL is a mineral charcoal extensively used for smelting iron. It is black, light, and sometimes with a shining surface. It is to be found in many of our coal mines, particularly in those of South Wales.

ANTIGUA, one of the most important of the Leeward Islands. ***Extent***, 108 square miles. *Population.* 37,125. ***Principal Towns.*** St. John's, Pasham, Falmouth. ***Products.*** Sugar, rum, molasses, cotton, arrowroot, preserves. *Imports.* Ales, beef, pork, bread, biscuits, butter, candles, dried fish, flour, machinery, meal, oats, rice, spirits, tobacco, wines, wood, made-up clothing, manufactured woollen and cotton goods, bar iron, hardware, earthenware, glassware, &c.

ANTIMONY [Ger. and Du. ***Spiesglas***, Du. *Spidseglas*, Sw. *Spitsglas*, Fr. ***Antimoine***, It. Sp. and Port. ***Antimonio***, Rus. ***Antimonia***], one of the semi-metals, separated by fusion from a very hard and heavy lead-coloured substance called ore of antimony; this ore is composed of a number of extremely small, sparkling granules, which give it the appearance of a lump of the purest steel when fresh broken. Antimony is of a greyish-white colour, and has a good deal of brilliancy. Its texture is laminated, and exhibits plates crossing each other in every direction, and sometimes assuming the appearance of imperfect crystals. When rubbed upon the fingers, it communicates to them a peculiar taste and smell. The mines where antimony is taken are situated in Hungary, Transylvania, Bohemia, Saxony, and parts of France. Founders, pewterers, and clockwork-makers all make use of antimony.

ANTIPODES, in geography, are such inhabitants of the earth as live diametrically opposite to one another; that is, in parallels of latitude equally distant from the equator, but one north, the other south, and under the same meridian, though 180° is just half that meridian distant from one another.

ANTRIM, a maritime county in Ireland, prov. Ulster. N. and S., the Irish Sea; S., Down; W., Lough Neagh and Londonderry. Greatest length, 56 miles; breadth, 31 miles; area, 761,803 stat. miles. *Pop.* 235,936. *Under crop* in 1870: wheat, 9,650; oats, 85,309; barley, 806; beans and peas, 1,926; potatoes, 54,584; turnips, 7,558: other green crops, 2,323; flax, 16,955; meadow and clover, 81,486; total extent, 260,597, against 256,907 in 1869, 258,475 in 1868, 252,336 in 1867; uncropped arable land, 1,178, or 815 less than in 1869. *Live Stock.* Cattle of all kinds, 145,774; sheep, 83,701; pigs, 61,697; goats, 3,995;

poultry, 307,049; horses and mules, 27,515; asses, 498. *Minerals.* Clay-slate and limestone on the north coast. Coal at Ballycastle, but of an inferior quality. In the hill region from Larne to Cushendall there are fine beds of iron. *Industries.* Linen and cotton yarn-spinning, and linen and cotton-weaving. *Towns:* (county town) Carrickfergus, *pop.* 9,452, Belfast, 174,694, Lisburn, Antrim, and Larne.

ANTWERP, capital of the province of the same name, and the chief commercial city of Belgium. *Lat.* 51° 13′ 2″ N. *Lon.* 4° 24′ 2″ E. *Pop.* 122,669. In the sixteenth century Antwerp was one of the foremost among the commercial cities of Europe. It was described as at that time "a city of vast wealth and extensive commerce." Its prosperity, however, was brought to an abrupt conclusion by the Spaniards in 1576. In that year it was sacked and narrowly escaped destruction, and nine years later was invested, captured, and its trade was almost entirely annihilated. That was finally accomplished by the closing of the Scheldt in 1648, which gave the Dutch the absolute command of the river. After a long period of perturbations and vicissitudes, its trade began to gather elasticity and strength as the facilities of inter-communication with Europe were being developed, and within the last few years this port has entered upon a period of prosperity and progress of an apparently more lasting nature than that of former times. *Industries.* Distilleries, breweries, sugar refineries, rice mills, cotton manufactories, silk and lace factories, iron foundries, bleachworks, &c. *Exports.* Chiefly cast and wrought iron, wheat, rye, and barley, machinery, paper, eggs, cotton, wool, and linen manufactures, glass, coals, candles, &c. *Imports.* Coffee, coals, cotton, metals, cast iron, seeds, earthenware, salt, dyes, wool, rice, manure, hides, petroleum, tobacco, &c. *Trade.* The hides imported during 1867 numbered 773,788, showing an increase of 496,224 hides over the previous year. The sales amounted to 564,394, showing an increase of 15,594—the number entered in transit 275,209, being an increase of 153,398 over 1866. *Wool.* The principal supplies are derived from the River Plate; those from the Cape, Russia, and the Adriatic are small, and less appreciated. The general imports of this article during the last two years were as follows: In 1866, 95,589 bales; 1867, 118,571 bales. *Coffee* is imported chiefly from Brazil, the United States, Hayti, and Holland (by land). The following statement shows the receipts of coffee during the years 1865–67:—

	1865.	1866.	1867.
	Bales.	Bales.	Bales.
Direct Importations ..	230,272	178,684	223,169
From United States ..	27,922	16,800	29,443
„ European Ports	33,214	42,527	33,214
„ Holland (by land)	56,062	36,630	12,217
	347,470	274,641	315,276

Grain market is supplied largely from the Black Sea, Turkey, Hungary, and the Sea of Azof. *Hemp*, to the extent of 13,000 bales, is imported from Leghorn, Trieste, Genoa, St. Petersburg, France, Manilla, and Great Britain. *Cotton* receipts during the year amount to about 50,000 bales from N. America and Levantine ports. *Petroleum.* The importations have risen from 167,000 barrels in 1865, to 360,000 barrels in 1867, the qualities received being refined petroleum, naphtha residuum, lubricating oil, and crude petroleum. *Rice.* The trade in this article in 1865 amounted to 314,153 bales; in 1866, 437,573 bales; and in 1867, 345,084 bales. *Sugar.* The refineries employ about 13,500 tons of cane sugar yearly. *Shipping and Navigation.*—The following is a comparative statement of the arrivals during the years 1865–1867:—

	Vessels.	Tonnage.	Aver. Ton.
1865	2,998	776,000	253
1866	3,085	901,556	292
1867	3,479	1,154,640	231

Freights.—The average rates of freights have been:—

From Callao: cargo, guano	60*s.* to 70*s.* per ton.
From United States: cargo, petroleum	6*s.* per barrel.
From Rice Ports: cargo, rice	60*s.* to 70*s.* per ton.
From River Plate: cargo, wool and hides...	15*s.* to 30*s.* per ton.
From Brazils: cargo, coffee	50*s.* per ton.
From Havanna: cargo, sugar	45*s.* to 55*s.* per ton.
From the Black Sea: cargo, grain	6*s.* to 8*s.* per quarter.

ANTWERP AND ROTTERDAM RAILWAY. *Sub. cap.* £500,000. *Share*, 10; *par.* 10. Last four div. paid, 5¾, 6, 6⅝, 6⅝, payable in May, yearly. *Prices* in 1869: highest, 11¼; lowest, 9⅝: in 1870, highest, 12⅞; lowest, 9⅝; in 1871, highest, 17½; lowest, 11⅝.

3 per Cent. Obligations. *Sub.* £941,000. *Share*, 20; *par.* 20. Last four div., 3, 3, 3, 3, payable in May yearly. *Prices* in 1869: highest, 12¾; lowest, 10¾. *Markets*, London and Liverpool. *Address*, 86, Cannon Street, E.C.

APPLE [Ger. *Apfel*, Fr. *Pomme*], the fruit of the *Pyrus malus*. The Golden and Ribston Pippins are esteemed the best for the table.

APPRAISING, the valuing or setting a price on goods. This must be done by a sworn appraiser or valuer, who takes out an annual licence from the Excise. Each appraisement must be extended on a stamp, in terms of the statute.

APPRAISEMENT—	£	*s.*	*d.*
Amount not exceeding £5	0	0	3
„ „ 10	0	0	6
„ „ 20	0	1	0
„ „ 30	0	1	6
„ „ 40	0	2	0
„ „ 50	0	2	6

	£	s.	d.
Amount not exceeding £100	£0	5	0
„ „ 200	0	10	0
„ „ 500	0	15	0
„ exceeding 500	1	0	0

The stamp must be on the sheet containing the aggregate amount of valuation.

Persons delivering an appraisement written on unstamped paper are liable to a penalty of £50.

Apprentice, an individual who is under 21 years of age, and who is bound by indenture to some tradesman, in order to receive instruction in a certain trade. In return for this instruction, it is stipulated that he (the apprentice) shall serve his employer for a specified time. The enforcement of the obligations between masters and apprentices is committed to the Justices of the Peace. These obligations are numerous, but they may be briefly summed up to this effect: that the apprentice shall faithfully serve his master, and that the latter will teach the former his trade or profession to the best of his ability. The indenture of apprenticeship must be stamped as follows:—

Apprenticeship, Indenture of.—To learn a profession, trade, or employment (except articles of clerkship to an attorney or solicitor):—

	£	s.	d.
Where no premium is paid, the apprenticeship not being in order to admission in any court	0	2	6
Premium under £30	1	0	0
„ „ 50	2	0	0
„ „ 100	3	0	0
„ „ 200	6	0	0
„ „ 300	12	0	0
„ „ 400	20	0	0
„ „ 500	25	0	0
„ „ 600	30	0	0
„ „ 800	40	0	0
„ „ 1,000	50	0	0
„ 1,000 or upwards	60	0	0
Counterpart, or Premium	0	5	0

Apprenticeship *in the Sea Service.* In seeking employment for boys as apprentices on board a vessel, application should only be made to such persons as are duly authorized by the Board of Trade to make engagements, and these are—"The owner, the master, or the mate of the ship, or some person who is the *bonâ fide* servant, and is in the constant employ of the owner; the superintendent of a Government mercantile marine office, or an agent licensed by the Board of Trade." According to the Merchant Shipping Act of 1854, superintendents of mercantile marine offices are required to afford "persons desirous of apprenticing boys to the sea service, and to masters and owners of ships requiring apprentices, such assistance as is in their power for facilitating the making of such apprenticeships." The same Act provides that—1. If any unauthorized person engages or supplies any man, seaman, midshipman, or apprentice to be entered on board any ship in the United Kingdom, he will be liable to be prosecuted, and, if convicted, to a penalty of £20 for each offence. 2. If any person employs an unauthorized person, he will be liable to be prosecuted, and, if convicted, to a penalty of £20 for each offence. 3. If any person knowingly receives or accepts to be entered on any ship any mate, seaman, midshipman, or apprentice, illegally engaged or supplied, he will be liable to a prosecution, and, if convicted, to a penalty of £20 for each offence. And, 4. Any person other than the superintendent of a Government mercantile marine office, who demands or receives, directly or indirectly, any remuneration whatever from any mate, seaman, midshipman, or apprentice, for obtaining them employment, will be liable to a prosecution, and, if convicted, to a penalty of £5 for each offence. These provisions are given thus fully on account of the frauds in connexion with the apprenticing of lads to the merchant service discovered by the authorities at the Board of Trade, and which people might easily prevent by applying direct to the Registrar General of Seamen, 6, Adelaide Place, London Bridge, E.C., from whom may be obtained, free of charge, a printed list of persons authorized to engage or supply mates, midshipmen, apprentices, boys, and seamen. The fee for each apprenticeship effected through the superintendent's assistance is only five shillings.

Apricot [Ger. *Ahprikat*, Fr. *Abricot*], an Asiatic fruit, several kinds of which are cultivated in the south of England. It is the fruit of the *Prunus Armeniaca.*

Aqua-fortis, a corrosive liquor extracted from saltpetre, mixed with sand, alum, or vitriol, which is used as a menstruum to dissolve silver, and is commonly held to have been invented about the year 1300, being of a variety of uses among refiners, dyers, mosaic workers, colourers of ivory, bookbinders, diamond-cutters, and engravers.

Aqua Marina, a gem or precious stone of a sea-green colour—whence it has this denomination—which is found along the sea-coasts.

Aqua Regia, or *Aqua regalis*, an acid corrosive spirit of water, serving as a menstruum in the dissolution of gold. The essential ingredient in *aqua regia* is common or sea-salt.

Araki, a liquor of Egypt, prepared from the grape.

Arabia extends from 12° to 34° N. *Lat.*, and from 32° to 60° E. *Long.* It extends about 1,500 miles from N. to S., and 1,300 from E. to W. *Pop.* About 10,000,000, composed of the commercial inhabitants of the coast, and the Bedouins or Arabs, engaged in pastoral pursuits. *Divisions*: Hedjaz, or the Sheriffat of Mecca, subject to the Viceroy of Egypt, the kingdom of Yemen, and Imamat of Muscat. *Soil, &c.* The nature of the soil is arid in the extreme. Agriculture is occupied in the production of wheat, maize, millet, barley, beans, lentils, rape, with the sugar-cane, tobacco, cotton, and fruits; a few dyeing drugs, especially indigo and Indian madder, are also cultivated. *Manufactures and Commerce.* From Yemen are exported coffee (esteemed the finest grown), aloes, myrrh (the best of which is from Abyssinia), olebanum (or an inferior kind of frankincense), senna, ivory, and gold from Abyssinia. *European Imports.* Iron, steel, arms, lead, tin, cochineal, mirrors, cutlery, &c. *Weights and Measures.* The covid = 19, and the guz = 25 imp. inches: the gudda of 8 noosfias = 1·8 imp. gallon; and the tomand, dry measure containing 40 killas, weighs of rice 168 lb. avoir. The bahar of 15 frazils or 150 maunds = 450 lb. avoir. The miscal, of 15 coffola or 24 carats = 73·37 Troy grains, 10 coffolas = 1 vakia, and 87 vakias = 100 Spanish dollars weight. *Money accounts* are kept in piastres or Mocha dollars of 90 casears; and as 121¼ piastres = 100 Spanish dollars, the piastre is worth 3*s.* 5*d.* The native coins are commasses of 7 carats; 40 commasses = 1 dollar.

Araki, a liquor of Egypt, prepared from the grape.

Arbitration Bond, *Form of.* Know all men by these presents that I —— am held and firmly obliged to —— in —— pounds sterling to be paid to the said ——, his attorney executors or administrators, to which every payment well and faithfully to be made I oblige myself my heirs executors and administrators firmly by these presents. Sealed with my seal, dated at —— on the —— day of ——, &c., &c.

The condition of this obligation is such, that if the above bounden —— his heirs, executors, and administrators, for his and their parts and behalves do in all things will and binding stand to obey abide by perform fulfil and keep the award order arbitrament final end and determination of —— and —— arbitrators, indifferently named elected and chosen as well on the part and behalf of the above bounden —— as of the above named —— to arbitrate award order judge determine of and concerning all, and all manner of action and actions cause and causes of action suits bills bonds specialties judgments executions extents quarrels controversies trespasses damages and demand whatever at any time or times heretofore had made moved brought commenced sued prosecuted done suffered committed or depending by or between the said parties so as the said award be made and given up in writing under their hands and seals, ready to be delivered to the said parties on or before the —— next ensuing the date above mentioned. * But if the said arbitrators do not make such their award of and concerning the premises by the time aforesaid, that then if the said —— his heirs executors and administrators for his and their part and behalf do in all things well and truly stand to obey abide by perform fulfil and keep the award order arbitrament umpirage final end and declaration of —— umpire indifferently chosen between the said parties of and concerning the premises so as the said umpire to make his award or umpirage of and concerning the premises, and deliver the same in writing, under his hand and seal, to the said parties on or before the —— next ensuing the date above said, when this obligation to be void, or else to remain in full force and virtue.

Arbroath and Forfar Railway, guaranteed £13,500 per annum, by Caledonian. *Sub. cap.* £224,600. Share 25; par. 25; div. paid, 6 per cent. per annum in April; prices in 1869, highest 33, lowest 31; 1871, highest 32¼, lowest 31¾. Markets, Edinburgh and Glasgow. Address, Arbroath, North Britain.

Archangel, an important city and seaport of Russia, in the dept. of the same name, situated on the right bank of the Dwina, 40 miles above its juncture with the White Sea. *Lat.* 64° 32′ 8″ N. *Lon.* 40° 33′ E. *Pop.* of the town, 19,092 (9,911 males, 9,181 females). *Exports*, Linseed, oats, rye, flax, tar, pitch, mats, and deals. The average value of the exports for the four years ending 1867, was £1,042,370, and in 1868, £1,504,211. To Great Britain the average value exported in the same period was £697,692, and in 1868, £1,505,211. *Imports.* Tea, coffee, wine, salt, oil, and Norway fish. The average value of imports for the five years ending 1867 was £67,227, and the amount in 1868, £69,131, wherein fish from Norway figured for £36,139. The average value imported from Great Britain in 1863–67 was £13,310, and in 1868 £10,916; tea, salt, wine, and machinery for saw mills are the principal imports from the United Kingdom. *Domestic Trade* consists chiefly in meat, game, fish, and furs. *Market Prices of Goods.* Linseed, per imp. quarter, £2 8*s.* 7*d.*; oats, 19*s.* 7*d.*; rye, £1 13*s.* 4*d.*; flax, per ton, £52 7*s.* 4*d.*; flax-tow, £33 19*s.* 10*d.*; rye flour, £9 3*s.* 9*d.*; tar, per barrel, 9*s.* 6*d.*; pitch per cwt. 5*s.*; mats, per 100, £3 1*s* 3*d.*; deals, per standard hundred, £6 4*s.* *Shipping and Navigation.* The average total of the shipping cleared from the port in the five years ending 1867 was 446 vessels, 96,712 tons, against 568 vessels, 124,436 tons, in 1868; and the average amount of British shipping cleared in the same period was 166 vessels, 38,088 tons, against 173 vessels, 45,175 tons, in 1868. *Freights*, The highest and lowest rates paid to the E. coast of Great Britain: linseed, per imperial quarter, 4*s.* 9*d.* and 4*s.* 6*d.*; oats, per quarter of 320 lb. Eng. 4*s.* 3*d.* and 3*s.* 10½*d.*; flax, per ton, £2 5*s.* and £2 3*s.*; tar, per barrel, 5*s.* and 4*s.*; deals, per standard hundred, £4 and £3 10*s.* *Weights, Measures, and Money.* One pound Russ = 9·10 lb. English; 1 pood, or 4 Russ = 36 lb. English; 63 poods = 1 ton; 1 chetvert = 7/10th of imperial quarter; 1 rouble = 35 pence; 686 copecks = £1 sterling. **Government of Archangel.** *Agriculture.* The crops consist of barley, potatoes, rye, and oats, but principally of barley. The food of the people and the corn exported are supplied principally by the Vologda and Viatka governments. *Pop.* 269,008 (128,859 males and 140,149 females). The inhabitants of the northern districts find subsistence in the fisheries of seal, cod, herring, and salmon; in snaring and shooting game; and in the barter trade with Norwegian. Firmark for rye flour against fish. The more southern districts subsist partly from agriculture, partly from the felling of timber, and manufacture of tar and pitch. *Salt Works.* There are several engaged in producing salt from salt springs, but the solution is weak and of so poor a quality that only the protective import duty (2*s.* per cwt.) enables it to compete with foreign salt.

---

* If there is no umpire the latter part must be omitted, viz., from "But if the said articles."

ARCHETYPE, the name given at the mint to the original weight or standard which is kept there, and by which all other weights ought to be examined or adjusted.

ARDEL, an Abyssinian measure for grain. In the interior it contains 10 madegas, and on the Red Sea 24; about 80 madegas go to an English imperial bushel.

ARECA, a fruit produced in the East Indies. The tree is tall, straight, thin, and round. It is of the palm kind, and has no branches. It grows to the height of 25 to 35 feet, and the shell which contains the fruit is smooth without but rough and hairy within, in which it resembles the shell of the cocoa-nut, though in size it is only equal to that of a large walnut. The kernel is as big as a nutmeg, to which it bears a resemblance inwardly as well as outwardly. In the centre of the fruit, when it is soft, is contained a greyish and almost liquid substance which grows hard in proportion as it ripens. The fruit when ripe is astringent but not unpalatable, and the shell is yellowish. From this fruit is extracted a juice of a dark brown colour which possesses valuable qualities as a dye.

ARGAL [Ger. *Weinstein*, Du. *Wynstun*, Sw. *Winsten*, Fr. *Tartre*, It. Sp. *Tartaro*], the lees of wine used in dyeing.

ARGENTINE REPUBLIC, a South American confederation, whose constitution bears date 1853. Chief towns: Buenos Ayres, *pop.* 177,787; Sante Fé, 10,324; Parana, 6,050: Corrientes, 10,546; La Rioja, 4,489; Catamarca, 5,718; San Juan, 8,353; Mendoza, 8,124; Cordova, 28,523; San Luis, 3,748; San Jago, 7,775; Tucuman, 17,438; Salta, 11,716; Jujuy, 3,072. Approximate area, 603,272 square miles. Total *pop.* of provinces, 1,743,142. The district of Gran Chaco, Patagonia, and the Pampas Argentina have areas respectively of 260,615, 364,862, and 93,822 square miles; and *pops.* of 45,000, 25,000, and 20,000 persons. The *revenue* of the Republic in 1870 was £2,637,324 against £1,659,014 in 1865; and the expenditure for 1870 was £2,877,529 against £1,375,235 in 1865. The deficit in 1870 was £240,205. *Debt.* The English loan of 1824, at 6 per cent., £905,800. Deferred 3 per cent., £1,110,900. Loans of 1866 and 1868 at 6 per cent., £2,500,000. Total of Foreign Debt, £4,516,700. Consolidated debt, 6 per cent., £2,567,907. Debt to Brazil, £228,541. Debt of Parana, £433,309. Foreign obligations, £18,852. Debt of Buenos Ayres, £596,988. Total of Home Debt, £3,845,597. Grand total, £8,362,297.

LENGTH OF RAILWAYS OPEN, IN COURSE OF CONSTRUCTION, AND PROJECTED THROUGHOUT THE REPUBLIC.

——		In Working.	In Construction.	Projected.
		Metres.	Metres.	Metres.
West	From Buenos Ayres to Chivilcoi	160,000	—	—
	„ Merlo to Lobos	—	—	68,000
North	From Buenos Ayres to Las Conchas	31,146	—	—
	„ Las Conchas to Zárate	—	—	78,000
South	From Buenos Ayres to Chascomus	114,000	—	—
	„ Chascomus to Dolores	—	—	—
East	From Buenos Ayres to Boca & Barracas	6,000	—	90,000
	„ Barracas to Ensenada	—	45,000	—
Central Argentine	From Rosario to Cordoba	112,000	288,000	—
Entre-Riano	From Gualeguai to Puerto Ruiz	9,654	—	—
	„ Paraná to Nogaya	—	—	102,743
Entre-Riano & Corriento.	From Concordia to Mercedes	—	—	313,755
		432,800	333,000	652,498
TOTAL	Metres	1,418,298		
	English Miles	887		

Commerce. The external commerce of the country is conducted entirely at the town of Buenos Ayres, which is the outlet for the produce not only of the whole valley of the River Plata, but also of large districts of Peru and Chili. *Exports.* Beef, bristles, hides, and wool principally. Values yearly had increased from £3,766,337 in 1864, to £4,605,942 in 1866;

mports. Manufactures in silk, wool, and cotton, on, wearing apparel, &c. Values in this ranch had increased from £4,370,134 in 1864, o £6,453,816. Of the imports England gives bout one-fourth, and France about two-ninths. *Money*. The peso = 4*s*. *Weights and Measures*. The quintal = 101·40 lb. avoirdupois. Mètre ame as the French.

Argil [Fr. *Terre a potier*, Gr. *Topfererde*, Sw. *KruKomaKare-lera*, It. *Terra da Stoviglie*, Sp. *Tierra de Alfareros*], Potter's clay.

Argyle, a maritime county on the west coast of Scotland, extending N. to Inverness-shire; E. to Perth and Dumbartonshires; to he Atlantic on the W.; and to the Irish Sea and Clyde on the S. *Pop*. 75,635. *Industries*. Fisheries and distilleries. *Principal towns*. Campbelton, Dunoon, Oban, Inverary, Appin, Tobermory. (The first of these is engaged argely in the manufacture of spirits.) *Area*. 1,083,126 stat. acres. *Occupiers of land*. 3,432; average extent held by each, 33 acres. Acreage under crop of all kinds, bare, fallow, and grass, 114,660. *Under Corn Crops*. Wheat, 97 acres; barley or bere, 2,722 acres; oats, 20,542 acres; rye, 526 acres; beans, 446; peas, 20 acres; total, 24,353 acres in 1870, against 24,067 in 1869. *Green Crops*. Potatoes, 6,698 acres; turnips and swedes, 5,493 acres; mangold, 19 acres; carrots, 17 acres; cabbage, kohl rabi, and rape, 29 acres; vetches, &c., 29 acres; total, 12,285 acres in 1870, showing a decrease of 55 acres on the previous returns. Bare, fallow, or uncropped arable land, 2,417 acres; clover, sanfoin, and grasses under rotation, 19,735 acres. Permanent pasture, meadow, or grass not broken up in rotation (exclusive of heath or mountain land) 55,969 acres. *Live Stock*. Horses, 6,342; cattle, 56,640; sheep, 970,297; pigs, 5,080.

Arica, a seaport of Moquega, and principal town of S. Peru. *Lat*. 18° 28′ S. *Lon*. 73° 24′ W. *Pop*. 4,000. Arica is the natural outlet for the northern provinces of Bolivia, and derives its principal importance from the trade with that Republic. There is here a fine bay, good anchorage, an abundant supply of water, and a fertile valley in its vicinity, capable of supplying the wants of the province. The town is healthy, the climate equable, the thermometer ranging from 84° to 58° Fahr. in the shade. The principal road from Arica to Bolivia is by a railroad to the town of Tacua, a distance of 40 miles, and an altitude of 2,000 feet. From thence by a mule road over the Cordillera, which is crossed 45 miles from Tacua, at a pass called Tacoroi, 14,700 feet above the sea, free from snow and transitable at all seasons of the year. From this pass a descent is made of about 1,000 feet, to the great plateau that, reaching to the eastern range of the Andes, forms Bolivia. The traffic between Tacua and Bolivia is carried on by mules and asses, and also by the native llamas, which carry burdens of 100 lb. and travel ten miles daily. *Imports*. They are estimated at about £910,000 in the following manner:—

From Great Britain: in cotton, woollen, and linen manufactures, iron, malt liquors, hardware, earthenware; imported from Liverpool direct and *via* Valparaiso and Callao	£535,000
From France: in cloth, cashemeres, shawls, printed cottons, woollens, silks, boots, gloves, wines and spirits, earthenware, small wares, &c................	£200,000
From Germany: in cotton, trouserings, shawls, candles, steel, hardware, small wares, firewood, and glass wares	£50,000
From the United States: in furniture, oil, petrolum, lamps, &c...	£25,000
From Chile: in flour, wheat, wood, dried fruit, and general farming produce	£100,000
	£910,000

English cloths and kerseymeres, formerly largely consumed, are completly superseded by the German and French manufactures. English candles cannot compete in price, quality being equal with those from Germany. French earthenware, in point of cheapness, durability, and beauty, is far superseding English. English tanned and dressed leather cannot be introduced to compete, either in price or quality, with French or German; and English glass ware is quite driven from the market by Continental makers. (These statements are made on the authority of Vice-Consul G. H. Nugent). The *Exports* are of great importance and embrace:—

	$
Copper Barilla, about 4,000 tons, value from $16 to $18 per quintal	1,584,000
Tin Barilla, about 450 tons, value on board $14 per quintal	140,000
Bars, tin, about 320 tons, at $24 per quintal	168,000
Alpaca wool, 600,000 lb., at $20·99 cents....................	420,000
Sheep wool, 100,000 lb., at $35	35,000
Cotton, 100,000 lb., at $35·99 cents.	35,000
Calisaya bark, 1,000,000 lb., at $25..	750,000
Cobalt ores, 1,000,000, at $10	100,000
Chinchilla skins, 80,000, at $11	80,000
Total	$3,312,000

The above estimate is a fair average of the last five years' exports. Copper Barilla is native copper in every minute particles, mixed with sandstone, and is considered the finest copper in the world; it is brought from Corocoro in Bolivia, about 191 miles to the E. of Tacua. The sandstone contains from two to four per cent. of copper; this is crushed by hand labour, and the earthy portion washed away, leaving a residue of 70 to 90 per cent. of pure copper. Hard ores are also very abundant in Corocoro, yielding 20 to 30 per cent.; but owing to the absence of fuel and, being carbonates, to the impossibility of improving their per-centage by washing, they are little worked. Land carriage is so costly that it does not have account to send down to the coast under 70 per cent. Tin in bars is brought from Polosi and Druro, and also from the later place in Barilla, averaging 60 to 74 per cent. The tin from Druro is known in England under the name of Guanuni, and takes rank amongst the first tins in the world. Potosi tin is of inferior quality, and much alloyed with lead; the supply is abundant, but the export is not on the increase; low prices in the European markets and a high land carriage prevent the development of this commodity. Bark shipped from Arica is the pure Calisaya, superior to any quality known, and commands the highest prices in Europe. Chinchilla skins of the best quality are imported exclusively from Arica; those obtained in Chile are very inferior. It is feared that the Chinchillas will become extinct in consequence of the persistence with which the Indians hunt them down at all seasons, notwithstanding a decree of the Bolivian Government prohibiting their slaughter for five years.

Aridas, a kind of taffeta made in the East Indies.

Arish is a Persian measure equal to 3197 English feet.

Aristolochia [Fr. *Serpentaire*, Ger. *Schlangnwaryel*, It. *Serpentaria*], a plant, whose root is of a medicinal quality. There are four kind of aristolochia—the round, long, rampant or creeping, and the slender; but only the two former are used, which are both generally found in France, Spain, and Italy. Besides these there are several other kinds of aristolochia in America, particularly one kind in Virginia, called *viperinum Virginiæ*, from its alexipharmachic quality, the roots of it being an antidote against the bites of venomous animals. Good aristolochia should be dry and plump, without being wrinkled or withered, heavy, yellow within, and grey without.

Arkansas, one of the Western States of the American Union. *Boundaries*. N. by Missouri, E. by Missouri and the Mississippi river, S. by Louisiana and Texas (the river Mississippi separates this State from those of Tennessee and Mississippi), and W. by Texas and Indian territory. *Lat*. Between 33° and 36° 30′ N. *Lon*. Between 89° 45′ and 94° 40′ W. Length from N. to S. 240 miles; breadth from E. to W. 224 miles. *Area*. 52,198 square miles, or 33,406,720 acres. *Pop*. 324,335 white; 435,080 coloured. *Counties*. 54; viz., Arkansas, Ashley, Benton, Bradley, Carroll, Chicot, Clark, Conway, Crawford, Crittenden, Dallas, Desha, Drew, Franklin, Fulton, Greene, Hempstead, Hot Spring, Independence, Izard, Jackson, Jefferson, Johnson, Lafayette, Lawrence, Madison, Marion, Mississippi, Monroe, Montgomery, Newton, Perry, Phillips, Pike, Poinsett, Polk, Pope, Prairie, Pulaski, Randolph, St. Francis, Saline, Scott, Survey, Servier, Union, Van Buren, Washington, Washita, White, and Yell. *Towns*. Cap. Little Rock; commercial cap., Van Buren. The other principal towns are: Fort Smith, Camden, Batesville. *Desc*. A vast plain covered with marshes, swamps, and lagoons, but in some parts elevated to a moderate height. These elevations are in circuit often upwards of 30 miles. The Ozark Mountains divide the State into two unequal parts, of which the northern has the climate and productions of the Northern States, while the southern portion, in the character of its climate and productions, resembles Mississippi or Louisiana. *Minerals*. Coal, iron, lead, zinc, manganese, gypsum, and salt. Gold is found in the White County. The coal field commences 40 miles above Little Rock, and extends, on both sides of the river, beyond the western boundary of the State. Cannel, anthracite, and bituminous coal are all found in the State. *Soil and Productions*. Along the river, at intervals, the soil is a rich black mould. The country north of the Ozark Mountains is well adapted to grazing. The staple products of the State are Indian corn, cotton, and live stock, wheat, oats, tobacco, wool, peas, beans, potatoes, rye, barley, hemp, flax, and a variety of other articles. *Timber*. The bottom lands are covered with a heavy growth of cottonwood, ash, cypress, and gum. The hilly portions have hickory and different kinds of oak. Beech, pine, and other woods are found in abundance. *Manufactures*. Cotton fabrics, leather, &c. *Commerce*. No direct foreign trade. Its productions are exported from New Orleans, which carries on a large coaling trade with this State.

Arm, in respect of the magnet. A loadstone is said to be armed when it is enclosed, capped, or set in iron or steel, in order to increase its magnetic virtue.

Armagh, an inland county in Ireland, prov. Ulster. N. Lough Neagh. W. Tyrone and Monaghan. E. Down. S. Louth. Greatest length, 32 miles; breadth, 20 miles. *Area*, 328,076. *Pop*. 171,355. *Under crop* in 1870. Wheat, 11,812; oats, 66,829; barley, 329; beans and peas, 156; potatoes, 34,197; turnips, 5,798; other green crops, 2228; flax, 17,349; meadow and clover, 40,820; total, 179,518, against 177,757 in 1869; 1869; 176,151 in 1868; 176,220 in 1867. Uncropped arable land, 576 acres. *Live stock*. Horses and mules, 12,276; asses, 1,282; cattle, 73,332; sheep, 13,901; pigs, 24,073; goats, 6,340; poultry, 276,324. *Staple manufactures*. Cotton and linen weaving. *Towns*. Armagh (principal), pop. 7,865, Lurgan, Portadown, and part of Newry.

Arquifoux, or **Potter's Ore** [Fr. *Arquifou*, Ger. *Bleyglans*, Du. *Loolgleds*, Da. *Blyglands*, Sw. *Byglans*, It. *Archifoglio*, Sp. *Alquifol*, Por. *Arguifolha*, Rus. *Kubikowataia ruda*], a description of lead ore used by potters to give their works a green varnish. It is heavy, and melts slowly, but grinds quickly into powder. When it is broken it parts into shining scales of a whitish colour. In selecting, choose the heaviest lumps, where the scales are bright and resemble lin-glass. The ore is found in Barbary and Sardinia, and also in several parts of France.

ARRACK, *Tungusian*, is a spirituous liquor made by the Tartars of Tungusia of mare's milk, left to sour and afterwards distilled twice or thrice between two earthern pots, closely stopped, whence the liquor runs through a small wooden pipe. It is more intoxicating than brandy.

ARRACK or **RACK** [Ger. Du. and Sw. *Arrak*, Da. *Arrack*, Fr. *Arack*, It. *Aracco*, Sp. and Rus. *Arak*], a spirituous liquor made in the East Indies. There are several kinds of Arrack, distinguished by different names, such as Batavia arrack, which is a vinous spirit obtained by distillation from rice and sugar fermented, with the juice of cocoa-nuts. It is a strong spirit, but being made in copper stills, is not so disagreeable as Goa arrack. Bitter, black, and Columbo arrack are hot spirits little valued and seldom imported. The manner of making the Goa arrack is this:—The juice of the tree is not procured in the way of tapping; but the operator provides himself with a number of earthern pots, and, with these slung at his waist, climbs the trunk of a cocoa-nut tree. When he comes to the boughs, he takes out his knife and cuts off one of the small knots or buttons, and to the wound fastens a pot, into which the juice falls. When a sufficient quantity has been obtained, it is left to ferment, and when fermentation is over it is put into the still, and fire being made, the still is suffered to work as long as that which comes off has any considerable taste of spirit. The liquor thus procured is the low wine of arrack, and this is so poor a liquor that it will soon corrupt and spoil if not distilled again, to separate some of its watery parts. They, therefore, immediately after pour back this low wine into the still, and rectify it to that very weak kind of proof spirit, in which state it is found.

ARRANGOES are a kind of bead formed from the rough cornelian, and brought from the East Indies.

ARRANZADA, a land-measure of Spain, equal to 3 imp. roods 33 poles. Used in measuring vineyard land.

ARRATEL. The Portuguese pound = 7,083 Troy grains; and 98⅚ arratels = 100 lb. avoir.

ARROBA, a Spanish and Portuguese weight, which varies in different places; also a Spanish measure of capacity. The arroba weight—Spanish standard = 25·36 lb avoirdupois; Alicant = 27·38 lb.

ARROWROOT is produced from the plant Marantha. It is imported from the East and West Indies. When prepared in boiling water it should be free from all musty flavour, white, insipid, and form a consistent jelly.

ARSCHIN, a long measure used in China to measure stuffs. Four arschins make three yards.

ARSENIC [Ger. Du. and Sw. *arsenik*, Fr. *arsenic*, It. Sp. and Port. *arsenico*, Rus. *muschjak*] is prepared chiefly from the mineral called arsenical pyrites, which consists of iron, arsenic, and sulphur. It is found in Cornwall and Devonshire and in many parts of Europe, Asia, and America. Specific gravity, 5·9. It is brittle, white, faintly sweetish in taste, more or less translucent; sometimes it has a yellow or reddish tinge, owing to the presence of iron, sulphur, and other impurities. It is used in making dyes, in glass-manufacture, and at the potteries.

ARSHEEN, a cloth measure of Russia = 28 imp. inches.

ARTABA, a Persian measure of capacity = 2 imp. bushels almost.

ARTICHOKE [Fr. *artichaut*], an esculent vegetable (*cynara scolymus*) having large perennial roots and annual stems, bearing large round heads. Each of these is composed of numerous oval calycinal scales, enclosing the florets sitting on a broad, fleshy receptacle; this, and the fleshy base of the scales, being the only eatable parts of the plant, are gathered before the expansion of the flowers. Jerusalem artichokes are the tubers of the *Helianthus tuberosus*, a kind of sun-flower. This name is due to its strong resemblance in taste to the real artichoke.—*Waterston.*

ARTICLE, a small particle of an account contained in the journal, invoice, &c. Thus, it is said, such an account contains so many of debtors and so many of creditors. The bill of parcels or invoices sent contains so many articles, &c. *Article* is also said of the clauses, terms, and conditions agreed upon in partnership bargains and treaties, and also of the things adjudged by arbitrators. In this sense, they say it is agreed by an article of our partnership that the house-rent shall be paid out of the common stock, &c. In the bargain we have made together, there is an article by which you are bound to such a levy. This is according to an article of our treaty. Our arbitrators have determined such an article in our favour.

ARTOCARPUS INCISA, *Bread Fruit Tree.* A native of the South Sea Islands, but is found in India, especially in the Madras Gardens. It is cultivated also at Tavoy and Maulmain, and bears exceedingly well, but the fruit is of no great value, being full of seeds. Like the Jack, it bears fruit both on the branches and roots. The bark is made into a kind of cloth, which is worn by the natives of the South Seas. The bark is stripped, beaten, and, being thready, is, in a slightly moist state, plaited together.

ARTOCARPUS INTEGRIFOLIA, a species of valuable timber found all over India, which grows to about two feet and a half in diameter, and yields a wood much used for making furniture of every description. In colour it is red when cut, and turns a beautiful brown with age. It is in many respects superior to mahogany. The younger trees are well adapted for the manufacture of fancy furniture, and the others, being of a darker colour, for picture frames. In Ceylon, where this timber is found in great abundance, it is used in building;

beams, rafters, doors, and furniture are all made of it.

Artocarpus Laecucha, *La Coochia Bread Fruit*, grows in Burmah and Bengal, and is common in the gardens of the East. The whole tree and unripe fruit contain much tenacious milky juice; the roots are used for dyeing yellow. The male spadix is acid and astringent, and is eaten by the natives in their curries. In the Tenasserim Provinces this fruit is usually called by Europeans a kind of "fig," but it is a species of artocarpus occasionally raised near native houses. There are three varieties, the fruit of which is prized by the natives as an article of food, especially the first, which grows to great perfection anywhere throughout the provinces with little care.

Asbestus, in natural history, is a kind of fossil stone or mineral substance, of a whitish colour and woolly texture, consisting of small filaments, and endued with the wonderful property of resisting fire, and remaining unconsumed in the most intense heat. It is found in several parts of Italy, India, Tartary, Siberia, Egypt, Greece, and France. It is sometimes known as Earth-clay and Salamander's Wool. When required for the making of cloth, the stone is first soaked for a considerable time in warm water, and afterwards opened and divided, in order to separate the earthy parts, which are whitish, like chalk, and serve to bind the fibrous parts together. This operation is repeated six or seven times with fresh water, still opening and squeezing the mineral till all the heterogeneous particles are washed out, and then the flax-like parts are laid out on a sieve to dry. When thus cleansed it is carded gently, and then reeled, being kept, at this stage, moistened by oil. In the United States it is often used as a lamp-wick, and is well adapted for that purpose.

Ashoring, with builders, quartering to tack to in garrets, about two feet and a half or three feet high, perpendicular to the floor, up to the underside of the rafters.

Ashes [Fr. *Vedusse*, Ger. *Waidusche*], the earthy part of wood and other combustibles remaining after they are consumed by fire. These, if produced from a vegetable, are of a white colour and saltish taste, a few instances excepted, and, when boiled with fair water, yield a lixorum of an acrimonious, alkaline, fiery, urinous taste. The ashes of all vegetables are vitrifiable, and are found to contain some iron. Ashes of all kinds contain an alkaline salt, and are an excellent manure for cold and wet ground. They are also of considerable use in making lixoriums or lyes for the purposes of medicine, bleaching, and for sugar-works. They are distinguished by various names—as pot ashes, pearl ashes, barilla ashes, wood ashes, &c.

Ashlar, a term used by builders, by which they mean common freestones as they come out of the quarry, of different lengths and thickness: nine inches is the common thickness.

Asia, one of the four quarters of the globe, which may be divided into eight grand parts—namely, Asiatic Russia, Turkey, Persia, Hindostan, Tartary, the southern peninsula of India, China, and Japan. The islands of Asia are those of the Bay of Bengal, the Maldives, the islands of Sunda, the Philippines, the Moluccas, and the Marianas. *Productions.* Nature has furnished this part of the globe with extraordinary riches. The following is a brief statement of its wealth—viz., diamonds, pearls, coral, gold, silver, copper, iron, brimstone, saltpetre, alum, mercury, potters-earth, silk, cotton, opium, tea, coffee, sugar, sago, nutmegs, cloves, mace, cinnamon, pepper, indigo, liquorice-root, inglewood, rhubarb, musk, vermilion, borax, lapis lazuli, dragons-blood, incense, saffron, myrrh, manna, ambergris, and several other drugs and precious gums; corn, wine, rice, and all kinds of delicious tropical fruits. *Manufactures.* The porcelain of Asia is one of its principal articles of manufacture; it is divided into six classes, namely, common porcelain, ancient white, porcelain of Japan, that of China, India, and finally Japanese China. We are indebted to the Chinese for the first invention of porcelain, and to the Portuguese for introducing it into Europe. *Commerce: General View.* The Red Sea was the great channel of commercial intercourse between Asia and Europe before the Cape of Good Hope had been doubled: it was, previous to that event, the centre of a prodigious traffic, which, although since much decreased, is still very considerable; Europe received by this route a great deal of Indian and Chinese merchandise, calicoes, rich silks, stuffs, spices, drugs, diamonds, and vast quantities of pearls. They were exported to England, France, Holland, &c., and also to Trebizonde upon the Black Sea and Constantinople. The land commerce of Asia was principally engrossed by the Armenians, an industrious and honest people, who conveyed their commodities into Turkey in Europe and Russia by the Black and Caspian Seas. After this, the commerce which was carried on by way of the Cape of Good Hope included all the countries from the Gulf of Mocha to China, and all the islands from Madagascar to the Philippines. It was mostly confined to the coasts of the Continent, whither the merchants from the interior brought their merchandise for the purposes of traffic. The commerce carried on was very extensive, and may be classed under the following heads:—1. The commerce of Aden and Mocha, which the Turks carried on by the Straits of Babel Mandeb, and along the Red Sea as far as Suez, whence their coffee and other articles were conveyed to Egypt, and thence by sea or land to Constantinople, Aleppo, Smyrna, and other places. 2. The commerce of the Arabians and Persians, through the Persian Gulf to Bussora, by which they furnished the great caravans with all sorts of Persian and Indian commodities, which were afterwards transferred by the Euphrates and the Tigris to Bagdad, and thence on camels through the Desert to Aleppo and Trebizonde. 3. The commerce with the European and Indian merchants jointly upon the south coasts of India—namely, upon the coasts of Gurerat and Malabar—and the commerce with the European nations upon the other coasts of India—namely, upon those of Coromandel, Golconda, and Bengal. The commerce of Achia, at the northern point of the island of Sumatra, extends itself towards the south by two different courses. 1. By the western coast of this island to Rencoolen and the Straits of Sunda (which lie due south of it), and thence along the western coast of Java, where the vessels from England generally received their stores. 2. Towards the Straits of Bailly, the island of Timor of the Moluccas, by the eastern coast of the said island and the coast of Malacca to the port of the same name, and thence to the Straits of Singapore. Here the commercial course was divided into three channels; the first ran through the different parts of the eastern coast of Asia—viz., the Gulf of Siam, the coast of Camboya, Cochin China, Tonquin, and generally to Japan. The Chinese and the Malays carried on, as they do now, a vast commerce upon the great extent of this coast. The second channel ran from southward of Borneo to Batavia in Java, and to the whole coast of this extensive island, where the natives drive a considerable traffic from coast to coast, and from isle to isle. The third channel ran towards the innumerable islands of the Indian Archipelago; it extended not only to the islands of Jerinate, Tydor, Gilols, and the Celebes, but even to the Philippines.

Asphalt, Asphaltum (or mineral pitch, Jew's pitch, compact bitumen and maltha) [Arabic, *Hajar-ool-Moosa*], is found on the shores of the Dead Sea, at Arbona in Albania; also at Coxitambo in Cuenca in South America, and abounds also in the West Indian islands of Barbadoes and Trinidad, forming, in the leeward side of the latter island, a lake or plain, called the tar lake, and by the French *le Berai*, from its resemblance to, and answering the purposes of, ship's pitch. It is said to be a preventative of cholera, as also to kill the teredo. In many parts of the woods this substance is found in a liquid state, being held in solution by petroleum or naphtha. At one time it was considered invaluable as a roofing and paving material; but since then it has fallen into comparative neglect. Where damp has to be resisted it is useful; and in Mauritius, Ceylon, and India, where it has been used, it is found impervious to wet, white ants, or vermin, and, as it does not vegetate, rot, or decay, it is superior to Chunan, or the ordinary lime, as a flooring material. It is solid, brittle, of a black colour, vitreous lustre, and conchoidal fracture. It melts easily, and is very inflammable, burning, when pure, without leaving ashes. Sp. gr. 1·5

Assay. The term applied to the process for determining the value of gold and silver, both in plate and bullion.

Assafœtida [Fr. *Asafœtida*, Ger. *Teufelsdreck*, Sp. *Asafetida*, Du. *Duivels dreck*. Arab. *Hil teeth*, Hindu, *Hing*, Pers. *Ungoozeh*], a fetid gum resin, having a nauseous, somewhat bitter, biting taste, and an offensively strong, fetid, alliaceous smell. It is used in the East as a condiment for food, and is an article of the *Materia Medica*. According to Simmons, the consumption of this article in the United Kingdom amounts to about 10,000 lb. a year. It reaches this country principally from Bombay and the Persian Gulf. It is the product of the Narthex (Ferula) Assafœtida, which grows in Persia, in the neighbourhood of Herat, mountains of Daristan and Belochistan, and on the Hindu-Kosh, at 7,000 feet. The gum resin is obtained by slicing the roots. A milky juice exudes, which dries rapidly into a fetid, pasty, bitter, and pungent mass. Assafœtida occurs in commerce in shapeless masses of waxy consistence, with small, transparent, brittle, and white tears. The fracture is vitreous, at first white, and passing to red by contact with the air, a property which distinguishes it from all other gum resins. Another and much more valuable kind of Assafœtida is met with in the druggist's shop. It is in tears, or semi-transparent whitish granulations, free from impurities, and of a most powerful odour. This kind is readily reduced, and is much esteemed by European chemists. There is an inferior kind, full of sand and very fetid, which is said to be a compound of garlic, sagapenum, turpentine, and a small quantity of the real gum. To preserve Assafœtida, it should be kept in bladders inside of tin boxes, well closed, and kept apart.

Assam, a dependency of British India, inland, beyond the Ganges, on the E. frontier of the continent. It lies between 25° 50′ and 28° 10′ N. *Lat.*, and 90° to 97° 35′ E. *Long.* On the W. are the Himalaya Mountains, which separate it from Bhootan and Thibet; E. Thibet; S. the Naga and Garrows Mountains, which divide it from the Birman and Munneepoor Territories; and W. Bengal. Length, E. to W., about 460 miles. *Area*, 18,200 square miles. *Estimated pop.* 700,000. The valley of Assam, says Dr. Taylor, is rich in natural productions. It possesses gold, tea, caoutchouc, lac, and ivory. It abounds in silk, its two principal indigenous varieties of this article being the *muga* and the *eri*. A dress made of muga is prized beyond all others by the Assamese. Of woods, thirty-six species, applied to various useful purposes, have been described by Major Hannay as belonging to Assam. Most of them are light, strong, and durable, while not a few combine with those qualities a fine grain, which renders them well adapted for articles of furniture. The spices of the country comprise, in addition to such as are commonly cultivated, Bengal black pepper, long pepper, cardamuus texpatra, or malabath rum leaf, and jubrang, the capsule of a species of Xanthroxylum peculiar to the country, and described as aromatic, fragrant, and highly pungent. *Trade* is carried on chiefly with Bengal, calicoes, muslins, broad cloths, salt, liquor, crockery and opium being imported thence. Since tea was first discovered in the territory occupied by the Singho tribes it has been cultivated extensively, and large quantities of both black and green have been exported to the London market. *Productions.* Rice is the chief object of culture, then mustard seed, and, in succession, many kinds of pulse, wheat, rye, barley, &c.

Assets signify the stock-in-trade, funds, and, in fact, the entire property of a merchant, in contradistinction to his liabilities.

Assiento is a Spanish term signifying the contract by which a company of English merchants secured the right from the Spanish Government to import slaves into the colonies of Spain.

Assignats. After the revolution in France, the paper money then used to supply the place of coin was called Assignats.

Assignee. A person in authority who transacts the business of an estate in bankruptcy on the part of private individuals. Assigns, says Macculloch, may be created by deed or by law, &c., as when the lessee of a farm assigns the same to another; by law, when the law makes an assignee, without any appointment of the person entitled, as an executor is assignee in law to the testator, and an administrator to an intestate. The term is, however, commonly applied to the manager of bankrupt estates.

Assignment signifies the contract by which a right or interest in one person is transferred to another. In England, says Waterson, an assignment is employed in real property, generally for the purpose of transferring temporary or defeasible estates, such as estates for life or a few years; and it differs from a lease, in as far as it transfers the whole interest of the granter. In Scotland, in real property transactions, imperfect titles, containing authority to the holder to complete them, are transferred to purchasers and others by assignation, to enable them to make good their titles, and the portions to run of leases are common subjects of assignation.

Assize. When bread was formerly rated according to the price of wheat, the decree setting forth the price was called Assize.

Astern is the hinder part of the ship. A vessel sailing after another is said to be astern of her.

Assumpsit, a voluntary or verbal promise, whereby a person assumes, or takes upon himself, to perform or pay anything to another. All assumpsits must be for some valuable consideration, and they are either *express* or *implied.* Express is by direct agreement, either by word or note, without seal. Implied, when any person becomes legally indebted to another for goods sold; the law *implies* a promise that he will pay his debt, and if he does not pay it a writ lies against him.

Atchabannies, a kind of Bengal calico.

Atibar, a name for gold dust in the kingdom of Gago, in Africa, and of which the word tibir was composed, which also signifies gold dust.

Atlas, in commerce, a kind of silk or satin manufactured in India, in which gold and silver are so wrought together as no European workman can imitate. In China they weave long slips of gilt paper into their silks. The same slips of paper are twisted about silk thread so artificially as to look finer even than gold thread, though of no great value.

Atlas denotes a book of universal geography, containing maps of all parts of the known world.

Attachment signifies a writ issued by a court of justice to seize goods in payment of a debt. Goods in the hands of a carrier cannot be attached.

Attar or **Otto of Roses** is an essential oil prepared from flowers—it is generally supposed from roses alone, but that is a mistake; for it is obtained from many descriptions. It is a compound of two oils, one liquid, and the other solid and inodorous. The best is made at Ghazepore, in Bengal, when the nights are cool. To procure the oil the roses are put into the still, and the water passes over gradually, as in the rose-water process. After the whole has come over, the rose-water is put into a large metal basin, which is covered with wetted muslin, tied over to prevent insects or dust getting into it, and, being let about two feet into the ground, which has been previously wetted with water, it is allowed to remain quiet during the whole night. In the morning early, the little film of attar which is formed during the night is removed by means of a feather, and carefully placed in a phial. Day after day, as the collection is made, it is placed for a short period in the sun, and after a sufficient quantity has been procured it is poured off clear, and of the colour of amber, into small phials. Pure Attar has at first a pale greenish hue, but in a few weeks it becomes of a pale yellow. It is generally calculated that 100,000 roses will produce 180 grains of attar. It is used by the rich natives of India chiefly, and is exported to Persia and Turkey, but it is so expensive that the chiefs at the native courts prefer, on ordinary occasions, to "employ the perfumed oils prepared by their own distillation from the jasmine J. sambac and grandiflora) and cela and lemon grass. The Roosa oil, the oil of Heemaur, a volatile oil, erroneously called the oil of spikenard, is met with in the shops, and obtained from a plant named by Dr. Reyle Andropogon calamus aromaticus."

Auction. There are two kinds. The usual form is when goods are set up for sale at a minimum price, and those who bid exceed each other in offers. The other, called a Dutch auction, is when the highest price expected is named to begin with, and gradually reduced until a sale is effected.

Auctioneer is the person who publicly conducts auction sales. At the commencement he states the conditions of sale, and then receives the respective biddings. He is required to take out a licence from the Excise every year or which he pays £10. The licence is renewed every ten years, and should he fail in this, and still carry on his business, he is liable to a penalty of £100. To sell plate a special licence is required.

Audit, the examination of accounts by persons duly authorized.

Aune, a cloth measure of France = 47¼ imp. nches. The old aune of Paris = 46¾ imp. inches.

Aurichalcum or **Orichalcum** signifies a ictitious metal better known as brass. It is a nixture of copper and calamine stone, melted ogether by a very fierce fire.

Australia, a vast continent situated between the Pacific and the Indian Oceans, to the outh-west of Asia. The population is rapidly ncreasing, and is now supposed to reach nearly two millions. The productions are numerous, and the climate is not unhealthy. The seasons are the reverse of ours, Autumn, beginning about 22nd March, winter about June 22nd (the shortest day), spring about September 23rd, and summer December 22nd the longest day). Extent, 2,582,072 square miles. *Products*—The chief are maize, wheat, lax, tobacco, indigo blues, olives, sugar, cotton, gold, copper, iron, coal, silver, mercury, tin, zinc, antimony, wool, &c. *Colonies*—Victoria, New South Wales, South Australia, Queensland, and Western Australia. The colonies of New Zealand and Tasmania are detached from the continent, and are dealt with under their own headings.)

Australian Colonies.—*South Australia* was colonised in 1836. It is specially adapted for agricultural purposes, and its principal export is wool. *Extent*, 383,328 square miles; *pop.*, about 180,000; *principal towns*, Adelaide (*cap.*), Port Adelaide, Gawler Town, Kapanda, Kooringa, Kadina, Moonta, and Wallaroo. *Revenue and Expenditure*. The revenue for the year 1868 amounted to £716,004, or within £290 of the sum collected during the previous twelve months, while the expenditure was reduced from £1,003,271 to £852,689, or £150,582. An increase of £52,727 s shown in land sales, and a reduction of £41,809 upon railways. Customs duties are he sole means of taxation. In 1865 the duties averaged 30*s.* per head; in 1866, 27*s.* 2*d.*; in 1867, 23*s.* 3*d.*; and 1868, 22*s.* 6*d.*, of the population. *Land cultivation and live stock.* During the year 1866 the area of land alienated by the crown amounted to 199,693 acres, or 15,672 acres more than in the year preceding, making the total area of land in the possession of freeholders to be 3,769,897 acres, or equivalent to 21·9 acres per head of the population, or 1·1 acre more than last year. About two-thirds of this land is in the occupation of the freeholders themselves. Ten years ago there were 18·8 acres alienated for each individual, or 3·1 less than at present, showing that the acquisition of real estate has more than kept pace with the increase in population. Twenty-one per cent., or one in every five acres of purchased land, was under cultivation, being slightly below the proportion shown in the previous year, when twenty-three per cent. was under tillage. The total area under cultivation was 808,234 acres, or 2,500 less than in 1867–8, which season showed an increase of 71,020 acres, or ten per cent. over its predecessor. 68 out of every 100 acres of cultivated land were cropped with wheat in 1867–8, and subsequently the cultivation of this cereal amounted to 66 per cent. of the total cultivation, the difference being made up by the additional acre under barley and hay. The total acreage under wheat amounted to 533,036 acres, as compared with 550,456 acres in the previous season. It has, however, been noted in explanation of this decrease, that in the two preceding seasons the cultivation of wheat had increased one-third, and that the crop of 1868–9 exceeded that of 1866–7 by 7,540 acres. Fifty per cent. more barley was sown, the total produce amounting to 311,142 bushels, as against 193,341 bushels in the previous season, the average yield being not more than 14 bushels 32 lb. to the acre. The increased attention paid to the growth of this cereal cannot but produce valuable results. As the demand for malting purposes is annually increasing, doubtless care will be taken to cultivate the description of grain most suitable for the brewer. Peas have also been cultivated to a greater extent, one-fourth more land being planted, viz.—4,358 acres against 3,499 acres. The quantity of seed produced was 49,279 bushels, as compared with 36,381 bushels, an increase of 12,898 bushels, the average yield being 11 bushels per acre. This plant is said to have an excellent effect on lands that have been exhausted by wheat, and the rapidly increasing cultivation, nearly five-fold in five years, attests its value as a subsidiary crop. Only 4,210 acres of oats were grown as compared with 4,846 acres last season, or a decrease of 636 acres. The quantity was also deficient, the yield being only 14 bushels per acre. This cereal is chiefly cultivated in the moister climate enjoyed in the southern portion of the southern province. Potatoes were not planted to a greater extent than in the preceding season, whilst the crop has been slightly below the average yield, showing 47 cwt. to the acre, or one cwt. less. The total area dug was 2,684 acres, and the aggregate produce 6,335 tons, about one-half of the requirements of the colony. Nevertheless, the cultivation of this esculent has retrograded during the past five years, and at least thirty thousand pounds sterling per annum is sent to Victoria to make up the deficient supply. Orchards and gardens are returned as averaging 6,339 acres, 2,684 being of the former, and 3,715 of the latter. In addition thereto 6,060 acres are under vines; the number in bearing being 5,853,427, whilst 513,088 are yet unproductive. The vintage of 1867–8, to which the official returns refer, produced 812,118 gallons, as compared with 863,584 gallons the year preceding. Taking the average of seasons, the annual production is over 800,000 gallons, or nearly five gallons per head of the population. About 140 gallons is the average production per acre. The aggregate area of land described as in fallow was 118,404 acres, or only 1,077 acres less than in the preceding year. Under this head is included virgin soil broken up in anticipation of the ensuing seed time. The returns of the live stock are of a favourable character; the number of horses (exclusive of those in towns) was 75,409; cattle, 122,213. The fattening of stock on farms would seem worthy of the attention of agriculturists, seeing that the Adelaide meat market has for years been supplied chiefly from Queensland and New South Wales. Thirty-five million sheep are now depastured within the province, the increase during the past year having exceeded half a million. During the last three years the number has rapidly augmented. In 1867 there was 3,911,610; in 1868, 4,477,445; and in 1869, 4,987,024, showing an increase of more than one-fourth in three years. Three-fourths of the aggregate number are depastured within counties, the remaining fourth on four years, held under the ordinary leases of 14 years. *Minerals.* The value of the mineral produce exported during the ten years 1859-68 is returned at six millions sterling. They were fine copper, copper ore, lead, lead ore, regulus, &c. The following statement of the quantities and values of ores and metals exported will show the progress of mining industry for five years:—

Minerals.		1864.	1865.	1866.	1867.	1868.
Fine Copper ..	Cwt.	134,056	100,196	129,272	156,863	104,427
	£	673,791	433,795	584,509	627,384	400,691
Copper Ore ..	Tons	4,545	16,176	16,824	11,430	20,725
	£	38,125	184,677	225,683	113,409	207,519
Lead	Cwt.	63	82	1,351	3,391	3,049
	£	121	133	2,991	5,464	5,670
Lead Ore	Tons	567	86	648	212	76
	£	13,107	1,507	11,318	3,353	1,245
Regulus	Tons	52	—	—	25	10
	£	2,480	—	—	560	213
Total values, incuding other Minerals		£691,624	£620,112	£824,501	£753,413	£624,023

Trade and Commerce.—In 1868 the trade with the United Kingdom amounted to £2,837,249, as against £2,624,268 last year. Of this, £1,411,508 represented imports, or £213,265 more than last year, and £1,425,741 exports thereto, or nearly the same amount as in 1867. The balance of trade was in favour of South Australia by £14,233 only, as compared with £227,781 in the year preceding. The shipments to the Cape, chiefly bread-stuffs, amounted to £31,159. With Singapore and Batavia more trade was done. The exports to India of copper reached in value £73,409. The Mauritius trade shows a reduction in the imports of £114,438 as against £137,248, and in exports (excluding specie) thereto of £2,902—being £17,005 instead of £19,907 the year before. The imports from China amounted to £67,334, from Sweden £31,979, and the United States, £18,296. Bullion and coin to the extent of £64,508 was imported—or £28,884 less than last year. The balance of specie retained in the colony was £15,287 sterling. During the years 1859–68 the shipments of produce amounted to 22½ millions sterling; and whilst during the first half of the period the exports averaged 1¾ millions, during the latter half they had increased to an average of 2¾ millions sterling. Taking the average of the five years terminating with 1863, the value of the three principal staples, viz., breadstuffs, wool, and copper, was as follows:—wool, 33·9; copper, 27·0: breadstuffs, 35·2; and miscellaneous articles 3·9 per cent. of the total exports. Taking the like average for the similar period ending in 1868, we find breadstuffs contributed 36·2; wool, 35·2; copper, 25·6; and miscellaneous articles 3·0 per cent. of the gross produce. The following table shows the result of the wheat harvest and the export trade in breadstuffs during each of five seasons:—

Year.	Acres under Wheat.	Wheat Harvest.	Average yield per acre.		Flour and Wheat Shipped.	Average Price of Wheat per Bushel.		Total value of Breadstuffs, Grain, &c., Shipped.
		Bushels.	Bs.	lb.	Tons.	s.	d.	£.
864	335,758	4,691,919	14	0	76,553	8	6	1,464,593
1865	390,836	4,252,949	11	0	60,513	8	7	1,298,410
1866	410,608	3,587,800	8	44	38,808	6	2	645,401
1867	457,628	6,561,451	14	20	97,311	4	5	1,037,085
1868	550,456	2,579,894	4	40	33,520	7	1	568,491

Wool.—20,000 more bales of this staple were shipped in 1868 than in the previous year, the total quantity exported being 29,629,525 lb. in 86,913 bales, as compared with 66,395 bales during the previous year. In three years the shipment of wool from this colony has increased fifty per cent. The following table will show better than anything else the remarkable development of the wool trade;—

Year ending 31st December.	1866.	1867.	1868.
	lb.	lb.	lb.
From Port Adelaide..................	12,164,497	12,948,653	18,845,487
„ Port Wakefield	3,374,226	1,138,200	1,763,450
„ Port Robe	1,539,500	1,625,200	1,793,289
„ Port Augusta	857,188	2,329,515	4,210,307
„ Port MacDonnell	1,423,919	1,059,285	1,927,369
„ Port Victor	113,400	.. ..	.. ..
„ Port Caroline	266,793	249,442	359,288
Total Export of S. Australian Wool ..	19,739,523	19,350,195	28,899,190
Produce of other Colonies	1,168,562	3,283,697	730,335
Total Shipment, lb.	20,908,085	22,633,792	29,629,525
Total Shipment, bales	61,977	66,395	86,913
Total Value S. Australian Wool	£990,173	£919,532	£1,305,280
Total Value of other Wool	74,313	224,809	41,043
Total Value..........................	£1,064,486	£1,144,341	£1,346,323

WESTERN AUSTRALIA, commonly called *Swan River Settlement*, is situated on the west side of the continent, *pop.* about 29,000. *extent* 979,000 squore miles. Only the South-east angle is occupied, the average breadth of which is 150 miles; from north to south it is 900 miles. It is the oldest of the Australian colonies, having been discovered in 1829. *Principal Towns*, Perth (cap.), Freemantle, Guildford, York, Northam, Newcastle, Albany, Varse, Bunbury, Australind, Augusta, Mandurab, Geraldton, Lynton. *Principal products*, wool, copper, and zinc, magnetic iron ore, &c., coal has also been found. There are also mahogany, sandal wood, and other timber. Pearls and pearlshells, whalebone, Biche-de-Mer wine, tortoiseshell, birds, wheat, horses, horned cattle and sheep. *Revenue and Expenditure*, the former during the five years from 1866 to 1870, has been as follows:—£89,383 in 1866; £90,430 in 1867; £99,495 in 1868; £103,661 in 1869; £781,382 in 1870; and the expenditure in 1866 was £84,652; 1867, £89,501; 1868, £89,726; 1869, £103,124; 1470, 113,046; according to the *Statesman's Year Book* rather more than one-third of the public moneys is derived from customs duties, and the rest mainly from licences and leases of crown lands, mining and other business and land sales. The colony has an imperial grant in aid amounting to £13,821 in 1868 and to £15,000 in 1869. This colony is the only one of the continent that has no public debt. *Cultivation and Live Stock.* The agricultural interest has begun to revive from the severe shock sustained in 1867 from the spread of a disease known as red rust, but in the absence of official returns it is impossible to say what the progress latterly has been. The number of her stock in 1870 were:—horses, 22,174; cattle, 45,213; sheep, 608,892; the increase being four-fold since 1861. *Mining.* Very few of the rich copper and lead mines are being worked. The quality of ore is of a very high quality, obtainable at a reasonable cost, is unlimited, but the supply of labour, coupled with the means of getting the ore to the port of shipment, has hitherto been the drawback to the increase of this great resource. Capital is wanted. As regards the presence of gold, practical and experienced men from the gold fields in the Eastern colonies have expressed their belief that gold does exist, and that time and labour are alone necessary to reveal it. *Imports* of British home produce, consisting principally of spirits, beer, tea, sugar, tobacco, wines, animals, agricultural implements, rice, &c., amounted in 1866 to £110,739; 1867 to £78,802; 1868 to £107,847; in 1869 to £108,508; in 1870 to £104,045. *Exports* from W. Australia to Great Britain in 1866 amouted to £75,439; in 1867 to £84,984; in 1868 to £88,094; in 1878 to £131,096. *Custom Tariff.* Beer, per gal., 4*d.*; cigars, per lb. 2*s.* 6*d.*; coffee, per cwt., 4*s.*; spirits, pr. proof gal., 12*s.* An *ad val.* duty at the rate of 7 per cent. is levied on all goods not charged with a specific duty.

Queensland occupies the north-eastern portion of Australia. It is the youngest and most extensive of the colonies. *Pop.* about 107,427. *Extent.* 671,000 square miles. *Principal Towns.* Brisbane (cap.), Ipswich, Wowoomba, Drayton, Warwick, Dalby, Gayndale, Maryborough, Lockhampton, Gladstone, Roma, Bowen, Leyburn, Mackay, Somerville. *Chief Products.* Wool, gold, tallow, copper ore, hides, cotton, flour, fruit, tin, coal, iron, silk, sugar, maize, arrowroot, gullena, hardwood, coins, &c. *Revenue and Expenditure.* The former during the five years from 1865 to 1870 has been as follows :—1865, £931,432; in 1866, £490,270; in 1867, £669,041; in 1868, £780,117; in 1869, £772,858; and the expenditure in 1865 was £613,161; in 1866, £594,130; in 1867, £769,967; in 1868, £797,470; in 1869, £796,235. The public debt of the colony amounted in December, 1868, to the sum of £3,459,686, of which sum £3,021,186 was created by loans, and £438,500 under "The Treasury Bills Act," 1866. *Cultivation and Live Stock.* In 1866 there were upwards of 39,316 acres of land under crop, and a centesimal rate of increase during the year of 24·58 per cent. There were 3,783 acres under crop with wheat, 3,425 of which were sown for grain, and 358 acres for grass food. The area under crop with maize was 12,663 acres; under barley, 350 acres; under oats, 1,264 acres; under rye, sorghum, and millet, 100 acres; and under potatoes, 2,027. The cultivation of cotton continues steadily to increase, the returns showing that there were 11,454 acres of this product under crop in 1868 as against 8,264 acres in 1867. Sugar is an article which will, in all probability, become one of the chief articles of export; it is rapidly growing in favour amongst cultivators, the area of land under crop in 1868, being 3,396 acres, as against 1,995 acres in the year preceding, or a centesimal rate of increase of 70·23 per cent. The quantity of sugar manufactured in 1868 was 610 tons, and the quantity of rum 34,579 proof gallons. The cultivators of arrowroot appear to be decreasing. Although the area under tobacco is only about 30 acres, the probabilities are that the cultivation of this plant will ere long attract much more attention than it has hitherto done. It grows luxuriantly, and the only difficulty in the way of its culture being remunerative is the want of persons conversant with the curing of the leaf after it is gathered. The cultivation of the vine is on the increase, the area under crop in 1868 being 332 acres as against 194 acres in 1867. Of the total under crop, 88 acres are cultivated for the purpose of wine making; and this industry is likely to prove of great importance. During 1848, 2,165 gallons of wine were manufactured in the district of Brisbane, and 3,631 in that of Drayton. The number of stock in the colony in 1868 was: horses, 66,878; cattle, 963,279; sheep, 8,921,784; pigs, 26,185. *Mining.* The coal mines in this colony produce about 20,000 tons yearly. The principal gold fields are at Gympie Creek; the quantity and value of gold raised in 1868 was 12,242 oz., valued at £429,907. Of copper 9,930 tons, valued at £73,020. Of coal 19,611 tons, valued at £4,519. *Exports.* Wool is the staple article of export to the United Kingdom, the value of which is estimated at about 400,000 lb. per annum. The following figures will show the extent of this trade.

Years.		To Great Britain.		To New South Wales.		Total.	
		lb.	£	lb.	£	lb.	£
1866	Clean ..	3,189,768	272,754	8,810,457	613,999	14,346,239	987,965
	Greasy .	259,358	16,462	2,086,656	84,444		
1867	Clean ..	5,435,161	446,987	10,080,802	722,812	21,554,557	1,462,209
	Greasy .	512,168	22,461	5,526,426	269,949		
1868	Clean ..	5,823,585	404,286	9,393,292	529,790	18,906,778	1,057,211
	Greasy .	..	..	3,689,903	123,135		

The growth of trade in cotton has made great strides since 1861. In that year 365 acres were planted, and the produce thereof, 14,344 lb., valued at £1,413, was shipped in the following year. Heavy floods in 1862 throughout the cotton districts rendered the crop nearly a failure; 31,557 lb. were, however, exported, at a valuation of £4,186. In 1866 the area of land under crop was 1,884 acres, and the produce, 107,172 lb., was valued at £19,618. In 1867 the area was 8,149 acres, produce 411,941 lb., valuation £16,631; and in 1868 the area was 21,454 acres, producing 180,968 lb. valued at £68,929. The quantity of gold dust exported in 1868 was 195,801 oz., valued at £593,516, thus showing an increase of 116,709 oz., with £404,268 over the shipment of the preceding year. The value of copper exports shows an increase of £11,098; and that of salt beef, tongues, arrowroot and rum, of about £3,800. *Imports.* The principal are: drapery, flour, hardware, and ironmongery, malt liquors, sugar, spirits, tea, boots and shoes, hardwood, marble, wine, &c. The imports of British home produce amounted in 1866 to £533,914; in 1867 to £298,638; in 1868 to £409,303; in 1869 to £433,726; in 1870 to £343,951, thus showing a decrease in the direct trade with Great Britain. The decline, however, was confined to railway materials, gold in specie, sugar, kerosene, and live stock, and did not affect general merchandise. *Trade.* The estimated value of the exports and imports by sea during 1868 was—exports, £2,107,437; imports, £1,899,119; the value of the exports was thus in excess of the imports by the sum of £108,318. *Customs*

Tariff. Beer, per gall. 6*d.*; cocoa, per lb. 4*d.* cigars, per lb. 4*s.*; opium, per lb. 20*s.*; spirits, 10*s.* per gall.; sugar refined, per cwt. 6*s.* 8*d.*; tea, per lb. 6*d.* An *ad val.* duty of 7½ per cent. is levied on all goods not specified in the Customs' charge list, or included in the list of exemptions. Books, periodicals, newspapers, baggage, animals, plants, gold and silver coin, naval stores, &c., are admitted free.

Victoria is situated on the south-west of the continent. It was known formerly as the *Port Philip District*, and, until separated in 1851, belonged to the colony of New South Wales. *Pop.* 723,840. *Extent.* 86,831 square miles. It is the most populous and progressive of the colonies. Already upwards of 300 miles of railway have been completed. *Principal Towns.* Melbourne (cap.), Geelong, Ballarat, Sandhurst, Beechworth, Castlemain, Portland, Kyneton. *Chief products.* Gold, silver, iron, tin, antimony, coal, wheat, oats, barley, potatoes, wool, &c. *Revenue and expenditure.* The former during the five years from 1866 to 1870 has been—in 1866, £3,079,160; in 1867, £2,116,317; in 1868, £3,449,311; in 1869, £3,196,989; in 1870, £3,257,221; and the expenditure in 1866 was £3,222,025; in 1867, £3,241,818; in 1868, £3,449,311; in 1869, £3,196,989; in 1870, £3,435,406. *Cultivation and live stock.* The area of land under cultivation in the colony was, 507,798 acres in 1863; 479,463 acres in 1864; 530,196 acres in 1865; 592,915 acres in 1866; 631,207 in 1867; and 712,865 acres in 1868. At the end of 1868 the number of acres in "runs" was 28,505,344. The number of live stock in the colony at the end of March, 1869, was: 143,943 horses; 693,682 cattle; 9,756,819 sheep; and 136,206 pigs. The increase in the number of sheep has been one million since 1865. *Mining.* The number of miners at work in the gold fields is about 50,000, of which two-thirds are Chinese. The average earnings of each man in 1868 was £104 18*s.* 8*d.* There were 2651 ascertained quarts reefs, and 586,298 tons of quartz wire crushed. The average yield was half an ounce to the ton, and the cost of crushing ranged from 2*s.* 6*d.* to £1 10*s.* per ton. The extent of auriferous land opened up in Victoria is 882 square miles. The export of gold in 1866 was 1,479,195 oz., valued at £5,909,987; in 1867, 1,433,687 oz., £5,738,995; in 1868, 1,657,498 oz., £6,629,465; in 1869, 1,367,003 oz., £5,471,612; in 1870, 1,302,368 oz., £5,209,472. *Imports.* Coals, cottons, flour, grain of all kinds, haberdashery and drapery, hardware and ironmongery, iron and steel, machinery, oilmen's stores, provisions, railway materials, silks, stationery, sugar, spirits of all kinds, tea, timber, tobacco, wines, woollens, &c. The total value of the imports in 1866 was £14,771,711; in 1867, £11,674,080; in 1868, £13,320,662; in 1869, £13,908,990; in 1870, £12,455,757. *Exports.* The total value for the same years amounted to £12,889,546 in 1866; £12,724,427 in 1867; £15,593,990 in 1868; £13,464,354 in 1869; £12,470,014 in 1870. *Railways.* The system of railways in Victoria is more extensive than that of any other of the colonies. It consists of two finished main lines, says the *Statesman's Year Book*, one from Melbourne to Sandhurst, 101 miles in length; and the other from Melbourne to Geelong and Ballarat, with a short branch to Williamstown, the port of Melbourne, of a length of 107 miles. The Geelong and Melbourne line was purchased by the Government in 1860, and an extension from Sandhurst to the River Murray, at Echuca, of a length of 46 miles, has since been constructed. A third main line from Melbourne to Belvoir District, 186 miles in length, was commenced in 1869. The whole of the railways of the colony are State property, with the exception of a line 17 miles long, called the Melbourne and Hobson's Bay United, serving the total traffic of the chief city of Victoria. The following table shows the cost of construction and traffic of these railways.

Name of Railway.	Length of Line opened at the commencement of 1869.	Cost of Construction.		Number of Miles travelled in 1868.
		Total Cost.	Average Cost per Mile.	
	Miles.	£	£	
Melbourne, Sandhurst, and Echuca .. Melbourne, Geelong, & Ballarat Williamstown Branch	254	10,855,760	42,739	1,138,123
Melbourne and Hobson's Bay...	17	850,097	50,017	400,836
Total ..	271	11,706,057	43,196	1,538,904

In 1868 the gross revenue amounted to £712,765, of which £282,931, was derived from passenger traffic. *Telegraphs.* There is a uniform rate of one shilling for messages throughout the colony. There are 85 stations, [illegible], miles of wire. The number of telegrams despatched in 1868 was 238,951, the receipts from which were £29,120. *Customs tariff.* Beer, per gall. 6*d.*; cigars, per lb. 5*s.*; coffee, per lb. 2*d.*; dried fruits, sweets, &c., per lb, 1*d.*; Malt, per bushel 1*d.*; gold plate, per oz. Troy, 8*s.*; silver plate, per oz. Troy per ton, 20s.; spirits, per gall. 10s.; sugar, per cwt., 3s.; tea, per lb. 3d. Toys and fancy goods, agricultural implements, apparel and slops, harness, silks, stationery, millinery, musical instruments, &c., 10 per cent. *ad valorem.*

New South Wales, the colony of, is situated on the eastern coast of Australia, between the 28th and 37th degrees S. latitude, and the 141st and 154th E. longitude. *Extent.* 323,437 square miles. *Pop.* 500,000. *Principal towns.* Sydney (cap.), Bathurst, Bradwood, Goulburn, Maitland, Newcastle, Paramatta. *Revenue and expenditure.* Revenue and receipts in 1868, £4,281,611; expenditure, £3,480,494. *Imports.* Gold, manufactured leather, refined sugar, flour and bread, tea, apparel and slops, wheat, hardware, wine, woollens, tobacco, iron, steel, &c.: Value in 1870, £8,300,753. *Exports.* Gold, wool, coal, tea, hides, and skins, gold dust, flour and bread, spirits, sugar, &c., value in 1870, £9,933,442. *Cultivation and live stock.* Number of acres under wheat in 1869, 189,452, yield; 16¾ bushels per acre = 3,200,959 bushels, or double the yield in 1860. Price for Sydney wheat in February, 1871, 4s. 10d per bushel. Maize, for grain and green fodder, yielded in 1860, 1,602,630 bushels; and in 1870, 3,380,805 bushels; minimum price, 1s. 6d. per bushel. Maize meal, £9 per ton. Oats in 1869 covered 17,301 acres, and yielded 400,000 bushels. Barley returned from 12 to 14 bushels per acre. Potatoes, 54,200 tons, value £3 10s. per ton. Hay crop, 132,000 tons. Colonial butter and cheese sold for 4d. per pound. *Orchards.* The gardens comprise about 15,000 acres in the counties of Cumberland, Camden, and Durham. Cultivation, principally the orange; average yield of an old tree yearly, 12,000 oranges, value £25. *Vineyards.* Progress of cultivation; 1865, acres cultivated 1,849, producing 161,298 gallons of wine, and 3,077 gallons of brandy; 1870, acres 3,907, producing 460,321 gallons of wine, and 1,687 gallons of brandy. *Sugar-cane.* Progress of cultivation: 1867, 116 acres, crushed produce 17,786 lb.; 1870, 3,917 acres, production 3,463,704 lb. *Live stock.* Horses in 1870 numbered 290,304, or an increase since 1850 of 124,000, but in quality deteriorated. Cattle: short-horned, Hereford, and Devon breeds in 1870 numbered 1,795,904, or an increase of 57,000 animals. Sheep in 1870, 14,989,923, or an increase of double the number since 1850. Pigs in 1870, 175,924, showing an increase of thrice the number in 1850. *Wool* exported in 1859, 12,800,326 lb., in 1866-70, 30,000,000 lb. *Description.* A medium between Spanish wool and the [illegible] native quality of the German States. *Mineral resources.* Gold received at the Sydney Mint 1865, 280,820 oz., value £1,077,905; 1869, 224,582 oz., value £866,746. Diamonds, numbers found to date 5,500, average in weight one grain. Copper, silver, lead, and iron—in mines throughout the country. Coal mined in 1869, 768,862 tons. The quantity of copper ore brought to grass in 1868 was 3,466 tons, valued at £34,200. *Manufactories, mills, &c.* The number of mills for grinding and dressing grain is 1,868. Steam mills are gradually superseding those propelled by other motive power. The largest numbers of steam mills were in the metropolitan (15), Bathurst (24), and Armidale (11) districts. Woollen manufactures are on the increase, 227,464 yards of cloth and tweeds having in 1868 been sent out from five establishments. In that year there were 28 establishments for the manufacture of soap and candles, and the quantity of soap produced weighed 81,549 cwt., and of candles, 14,155 cwt. The quantity of tobacco manufactured was not so great as in 1864, but the production is in a satisfactory condition. The boiling down establishments had increased from 40 in 1867 to 49. The number of sheep, cattle, and pigs slaughtered for tallow and lard during each year of the last quinquennial period was as follows:—

Year	Sheep	Horned Cattle,	Tallow produced,	Pigs	Lard produced,
	No.	No	Cwt.	No.	lb.
1864	39,927	60,090	75,241	4,369	29,736
1865	20,006	44,103	73,793	2,763	10,182
1866	....	2,868	19,416	1,086	6,284
1867	54,862	3,842	36,154	358	2,252
1868	179,498	1,574	45,073	466	5,180

The tallow produced in the metropolitan districts is principally from the refuse obtained from the butchers The distillation of ru during the year 1868 reached 77,431 gallons as against 20,903 gallons in the year before The manufacture of refined sugar increase from 110,693 cwt. in 1867, to 155,120 cwt. i 1868. *Trade and commerce.* The importan position which this colony occupies as a marke for home and foreign supplies, as well as th extraordinary expansive character of its producing power, can afford no matter for surpris to those who are watching its advancement i material wealth. The general results of tradin operations in 1868 were as follows:—

	Value of Imports.	Value of Exports.	Excess of Imports.	Excess of Exports.
United Kingdom....	£2,[illegible]	£2,486,960	......	£[illegible]
British Colonies	4,[illegible]	3,464,[illegible]	£734,[illegible]	.....
Foreign [illegible].....	1,[illegible]	438,[illegible]	[illegible],454	.....
TOTAL....	[illegible]	£7,[illegible]	£1,[illegible]	[illegible]

Victoria took from this colony goods to the value of £[illegible]; Queensland, £1,214,766, and New Zealand, £[illegible], in each of which colonies the interchange was in their favour. The imports from the same places exceeded the exports of New South Wales thither in the following amounts: — Victoria, £116,886; Queensland, £401,604; New Zealand, £235,348. The imports from South Australia reached £[illegible], against an export value of £33,014, the excess being chiefly for flour and grain. *Railways.* There are four short lines, called respectively the Northern, Southern, Western, and Richmond lines, the passenger traffic on which yielded £180,072 in 1867, and £224,358 in 1868. *Telegraph.* There are now 4,385 miles of wire throughout the colony, the total cost of which was £169,946. *Customs tariff.* Ale in wood, per gall. 3d.; spirits, per gall. 10s.; coffee, per lb 2d.; dried fruit, per cwt. 10s.; hops, per bushel 6d.; rice, per ton £2; sugar, refined, per cwt. 6s. 8d.; tea, per lb 3d.; tobacco and snuff, per lb 2s.; wines, per gall. 3s. *Ad val.* duty of 5 per cent. on all goods not contained in the Customs schedule, except wheat, flour, tallow, wool, hides, skins, manures, ores, gold dust, bullion, coin, Government stores, luggage, specimens of natural history, books, seeds, esculents, plant, vine stakes, green fruit and garden produce, fresh meat, and live stock.

AUSTRALIAN OR MORETON BAY PINE, a remarkable but tender species, says Jeffrey, forming vast forests along the shores of Moreton Bay, in *lat.* 14° to 29° S., and on the alluvial bank of the Brisbane River, *lat.* 27° to 30° S. It attains from 100 to 130 feet in height, with a circumference of upwards of 14 feet, having a clear stem to 80 feet.

AUSTRIA, EMPIRE OF. One of the principal States in importance and population. *Area*, 243,787 English square miles. *Situation*, between *lat.* 42° and 51° N., and *long.* 8° 30′ to 26° 30′ E. *Pop.* 35,634,858, divided, with respect to races, as follows: Germans, 9,000,000; Bohemians, Moravians, and Slovacks, 6,600,000; Poles, 2,900,000; Ruthenians, 2,800,000; Slovenians, 1,210,000; Croats, 1,360,000; Servians, 1,470,000; Bulgarians, 25,000; Magyars, 5,450,000; Italians (including Latins and Franks), 1,030,000; Eastern Romans, 2,700,000; members of other races, 1,494,000. *Provinces.* Lower Austria, Upper Austria, Salzburg, Styria, Carinthia, Carniola, Trieste, Görz, Gradisca and Istria, Tyrol and Voralberg, Bohemia, Moravia, Silesia, Galicia, Bukowina, Dalmatia, Hungary, Croatia and Slavonia, Transylvania, Military Frontier. *Cap.* Vienna. *Productions and minerals.* Besides gold and silver, which are found in considerable quantities in the mines of Transylvania and N. Hungary, Austria has enormous supplies of lead, copper, and iron. Tin, calamine, zinc, cobalt, antimony, chrome, bismuth, manganese also exist; with considerable deposits of coal and salt. The mine of Wieliczka is reported to yield 35,000 tons of salt yearly. Vitriol, alum, sulphur, and saltpetre are likewise abundant. Compared with the demand for fuel, the quantity of coal raised is trifling, although there is scarcely a province deficient of this article. The immense forests, however, supply the greater portion of the fuel, and thus place a limit on the demand for coal. "Native steel, or carbonated iron ore, is found in Styria and Illyria in masses that require rather to be quarried than excavated. Of the rarer metals, *titan* is found near [illegible], in Hungary; *urane* in the [illegible], in Bohemia; *tellurium*, in Hungary and Transylvania. Besides the opals of Hungary, the most beautiful that are known, an inferior kind is found in Moravia; cornelian, beryl, chalcedon, topaz, garnet, and amethyst in Bohemia and Hungary of superior quality. . . . Upwards of 100 descriptions of marble quartz, for the manufacture of glass, clays for porcelain, and mineral dyes of all kinds, are also found in abundance. Upwards of 100 mineral springs are frequented annually, amongst which Carlsbad, Toeplitz, Marienbad," are very attractive The vegetable products comprise the different sorts of corn and of cultivated grasses found in Europe. There are also vines, flax and hemp, tobacco, hops, saffron wood, indigo, and fruits in great variety. The forests produce about 30,000,000 Vienna fathoms of wood annually, and yield besides considerable quantities of gall-nuts, potash, turpentine, and resin. *Manufactures.* Principally linen, woollen, and silk. The cotton manufacture is the most important, employing a vast number of people. The other industries are those of iron, leather, paper, and glass, the last chiefly in Bohemia. The leather trade, which so long was inconsiderable, has sprung up in consequence of the improved nature of the prepared hide, and thus caused a constantly increasing demand for foreign hides and skins. An improvement of late years has also taken place in the refining and working of iron in Austria, as may be inferred from the lesser import of these articles, as also of rails for railways, whilst the reduction of the Customs duties has caused a large demand for various other irons. *Commerce* is chiefly internal, and though burdened in some channels by Government monopolies, it is very great. The principal article of import into the Austrian empire is raw cotton, the declared value of it amounting in sterling to £3,304,686 in 1867, to £3,[illegible] in 1868, to £3,514,609 in 1869, and to £3,850,692 in 1870. Iron is next in importance, the imports of which were valued at £2,[illegible] in 1870. Silk manufactures follow, the figures for the same year being £2,017,240. In exports, corn and flour take the lead. In 1867 the values amounted to £7,985,468, to £10,[illegible] in 1868, to £7,602,315 in 1869, and £5,[illegible] in 1870. Next in importance stand raw wool and wood; the former exported to the value of £2,494,770, and the latter to £2,[illegible] in 1870. The most important markets for Austria are in Germany and Turkey, and the lesser in Italy and Russia. It has been computed that two-thirds of the whole commerce is carried on with

Germany. The direct trade with the United Kingdom is small, and appears much smaller than what it really is from the official returns, on account of the geographical position of the State, which necessitates the transit of many Austrian goods destined for the British market, and *vice versâ*, through other countries, as the exports or imports of which they come to figure. The late tariff reductions, however, have acted greatly in favour of the import of woollen stuffs from Great Britain. The considerable increase observable in the late demand for the commonest linens, as also pack-cloth of coarse description, was, to a great degree, attributable in 1867 to the enormous quantities of coarse wares required for the unusual export of grain in sacks. The export of paper and stationery from Austria is assuming large proportions, especially in the lower qualities. It is stated officially that the orders from England have been on so large a scale that they have exclusively occupied several of the principal paper manufactories of the State, and will continue to occupy them exclusively also for a long time to come. It is stated that several of the London newspapers are now printed wholly on paper from the Austrian fabriques. The excellence and cheapness of Vienna and Prague gloves causes them to be exported in large quantities to foreign markets, more especially those of North America. A great impulse has been given afresh of late to the manufacture of glass and all glass wares; in Bohemia many of the manufactories being kept working night and day in order to meet engagements. Several of these works send their coloured wares exclusively to Great Britain and the United States. The commoner wares take usually the route of the Danubian Principalities and of Turkey; the finer kinds, such as beads, buttons, brooches, articles for millinery and dress, as also the finer coloured vases of all descriptions, sizes, and shapes, used for dinner-services or for ornamental purposes, are sent to France, Great Britain, and America. The tariff reductions have greatly augmented the import of all kinds of iron and metal wares. But, at the same time, a great activity is found in the Austrian inland ironworks, which, especially in nails, screws, sickles, and scythes, instruments and utensils of all kinds, knives, &c., can hardly meet the demand made upon them. The increase of import in sewing-needles is also large, partly to be ascribed to the more greatly increasing use of sewing-machines. The celebrated fancy wares of Vienna, in their endless variety and tastefulness, especially all gilt wares, trinkets, &c., continue yearly to improve, and are sent in enormous quantities to all parts of the world. The Vienna matches are as celebrated as the foregoing articles, and are exported to all parts of the globe, on account of their excellence and cheapness. *Tariff.* The import duties on some of the principal articles produced in this country, in conformity with the existing commercial treaties between Austria and this country are: iron and steel wire, 8s 1½*d.* per cwt.; zinc, in sheets, 1s.6*d.*; cotton yarn, 8*s.* 1½*d.* minimum, 18*s.* 3*d.* maximum; flax and hemp, 1*s.* 6*d.* and 12*s.* 2*d.*; woollen, 1*s.* 6*d.* and 12*s.* 2*d.*; cotton goods, £1 10*s.* 5*d.* and £8 2*s.* 6*d.*; linen of flax or hemp, 12*s.* 2*d.* and £7 2*s.* 4*d.*; silk goods, £2 4*s.* and £6 2*s.*; paper for writing and printing, 2*s.* and 12*s.* 2*d.*; saddlery, 12*s.* 2*d.* and £1 1*s.* 4*d.*; glass wares, 1*s.* 6*d.* and 12*s.* 2*d.*; earthenware, 5*s.* 0½*d.* and 12*s.* 2*d.*; needles (sewing), £1 10*s.* 5*d.*; fire-arms, £1 10*s.* 5*d.* *Commercial towns.* Vienna is the great depot of the internal trade, the others being Prague, Pesth, Cronstadt, Lemberg, Brody, Botzen, Milan, Bergamo, Brescia, Semlin, and Debreczin. *Ports.* The chief are Trieste, Fiume, Revigno, Capo-d'Istria and Pola in Illyria; and Ragusa, Cattaro, Zara, Sebenico and Spalatro in Dalmatia. Trieste and Venice, however, engross the greater part of the foreign trade. STATISTICS. *Exports from Austria to Great Britain* 1861, £713,100; 1862, £795,280; 1863, £454,048; 1864, £369,225; 1865, £677,521; 1866, £1,369,831; 1867, £1,203,660; 1868, £2,029,310; 1869, £2,276,806; 1870, £1,104,662. *Imports of British Home Produce into Austria.* 1861, £816,202; 1862, £706,687; 1863, £864,736; 1864, £792,119; 1865, £724,648; 1866, £912,058; 1867, £963,952; 1868, £1,077,159; 1869, £1,341,102; 1870, £1,715,601. *Mercantile Marine.* International traders, 523 vessels, 226,335 tons; coasters, 2,678 vessels, 49,978 tons, 8,277 men; fishing vessels, 4,555, 13,830 tons, 11,940 men; steamers (14,369 horse power), 74 vessels, 34,253 tons, 2,073 men. Total, 7,830 vessels; 324,415 tons; 27,979 men. *Railways.* Cisleithan Austria, 619·8 Austrian miles open for traffic; 211·7 in construction; 238·7 concessions. Transleithan Austria, 331·3 open for traffic; 146·5 in construction; 124·0 concessions. Total in English miles, 4,517 open for traffic; 1,696 in construction; 1,719 concessions. *Minerals.* Value of production in 1867, gold florins, 2,406,041; silver, 3,635,643; quicksilver, 723,938; tin 33,812; zinc, 495,956; copper, 2,377,840; lead and litharge, 1,770,884; iron, raw and cast, 16,709,039; graphite, 271,123; mineral coal, 17,332,283. *State expenditure for* 1871, florins 349,811,640 or £34,298,116. The largest branch of expenditure, says the *Statesman's Year Book*, is the interest on the public debt, the burden of which falls mainly on the Cisleithan part of the monarchy. This debt has grown up gradually since the middle of the last century. At the end of the Seven Years' War in 1763, Austria had a debt of 150,000,000 florins, or £15,000,000 sterling, which grew to £28,300,000 in 1781; and at the commencement of the French revolution in 1789 it had risen to £34,900,000. From this period the debt grew to extraordinary proportions, rising to £82,500,000 in 1815, to £98,700,000 in 1820, to £108,000,000 in 1830, to £125,000,000 in 1848, and to £300,980,413 in 1868. The war against Prussia in 1866 increased the debt by about £30,000,000, but on the other hand freed Austria from the Lombardo-Venetian debt, which, by the Peace of Prague, of August 23, 1866, was transferred to Italy. The interest is now £9,998,471. *Money, Weights and Measures.* Money.—The florin (convention money), average rate of exchange, 2*s.*; florin (Austrian standard), equal to about 1*s.* 10¼*d.* The real medium of exchange, however, is a paper currency, consisting of bank notes of all denominations, from 18,000 florins down to one florin. The legal standard precious metal is silver. Weights and Measures: The Zoll centner = 110¼lb. avoir.; mark, gold and silver, 9 *oz.* troy; eimer, 14·94 com. gallons; joch= 1·42 acre; metze, 1·7 imp. bushel; klufter= 67 cubic feet.

AUTOM, a sort of bark which resembles cinnamon, but is paler and thicker; it is very much like a broken nutmeg in colour, and full of spangles. It comes from the Levant, and is an ingredient in the carmine dye.

AVA GEM SAND comes from the neighbourhood of Ava, and sometimes is one of the sham articles of merchandise. It consists of small fragments of all the precious stones found in the country, but garnet, beryll, and spinella, are its principal constituents, more especially the last, which seems to constitute nearly three-fourths of the whole mass. A single handful will contain specimens of every shade—black, blue, violet, scarlet, rose, orange, amber, yellow, some yellow and white.—*Masson.*

AVERAGE, *in Marine Insurance,* signifies the equitable adjustment of the proportion of a loss which is sustained by insurers. It is divided into three kinds, viz., *Particular average,* which consists in the extraordinary expenses incurred for the ship alone or for merchandize alone, such as the loss of anchors, masts, and rigging, occasioned by the common accidents at sea; the damages which happen to merchandize by storm, prize, shipwreck, wet, rolling, &c., all which must be borne and paid by the thing that suffered the damage. The *general average* being those expenses incurred and damages sustained for the common good and security, both of the merchandize and vessel, consequently to be borne by the ship and cargo and to be regulated upon the whole. Of this number are the goods and money given for the ransom of a ship and cargo, things thrown overboard for the safety of the ship, the expenses of unlading, for entering into a river or harbour, and the provisions and hire of the sailors, when the ship is put under embargo. The *small averages* are the expenses of towing and piloting the ship out of or into harbours, creeks, or rivers, one-third of which must be charged to the ship, and two-thirds to the cargo. *See* INSURANCE, MARINE

AVERAGE STATER in marine insurance is the officer who computes averages.

AVIADOR, a Spanish banker, who makes advances to carry on mining operations.

AVIS, French for advertisement.

AVOIRDUPOIS-WEIGHT, a weight used in Great Britain, the pound of which consists of sixteen ounces. This is the weight for large and coarse commodities, as cheese, wool, lead, hops, &c. Apothecaries buy their drugs by avoirdupois-weight, but sell by troy. The proportion of a pound avoir. to a pound troy, is as 17 to 14, the avoir. pound containing 7000 grains, and the troy pound 5760.

AVOS. In Java the rupee of two shillings is divided into 100 parts, each of which is called avos.

AWARD. The judgment of an arbitrator for terminating a difference left to arbitration by two parties who are at variance, for ending the matter in dispute, without public authority.

AWLS [Ger. *Ahlen,* Fr. *Alênes,* It. *Lesine*] are sharp pointed iron instruments used for boring holes. Shoemakers, saddlers, and some other mechanics use awls for the purpose of making small apertures in the leather, &c., for the admission of waxed cord, thread, &c., whereby the stitches may be formed. A short awl is also used by carpenters for boring holes in the covers of boxes, chests, &c., in order that the nails, on being driven in, may not split the wood. An awl of this kind is called a bradawl; the iron part of it is round, while that used by shoemakers is flat and curved.

AWNING, on board a ship, is a sail, tarpaulin, or covering, hung over any part of a ship to keep of the sun, wind, or rain.

AXE STONE, a silicate of alumina and magnesia, is a hard tough stone of a greenish colour.

AXES [Ger. *Aexte,* Du. *Axen,* Fr. *Cognées*]. Instruments consisting of a metal head, with a sharp edge, fixed in a handle. They are used by carpenters principally.

AXMINSTER CARPET is intended to imitate that of Turkey in thickness and the soft nature of its pile, the worsted being thrown entirely to the surface, instead of appearing on both sides.

AXONGE, the French for hog's lard.

AYAH, a female nurse or lady's maid in India.

AYMINATI, a land measure of Perpignan, equivalent to 1⅓ English acres.

AZARBA, a Spanish machine for winding silk.

AZBE, a Turkish headdress of black silk.

AZEN. The Netherlands troy engel consists of 32 parts or azens, and 20 engels is equal to one ounce English.

AZIMUTH *compass,* an instrument adapted to find, in a more accurate manner than by the common sea compass, the sun's or stars' magnetical amplitude or azimuth.

AZOGA *ships,* Spanish vessels engaged formerly in conveying quicksilver to the Spanish West Indies, in order to extract the silver out of the mines of Mexico and Peru.

AZORES (The), or WESTERN ISLANDS, belong to Portugal, and are situated between 36° 59′ and 39° 44′ N. lat., and 31° 7′, 25° 10′ W. long. The Archipelago is divided into three subordinate groups:—1, St. Michael and St. Mary; 2, Terceira, Fayal, Pico, St. George, and Graciosa; 3, Flores and Corvo, exclusive of several islets. *Pop.* About 210,000. *Seat of Government.* Augra in Terceira. *Exports.* The principal are oranges, wine, brandy, and, to a lesser extent, roccella. The growth of wines is considerable, especially in Pico, most of which is shipped to South America and the West Indies. *Imports.* From England, woollen and cotton goods, hardware and wearing apparel; from America, boards, stairs, lumber, fish, pitch, tar, &c. *Trade; value of* British imports, about £70,000 per annum. Money, weights, and measures same as Portugal.

Azabara, a small Spanish coaster.

Azure, a name for a celebrated blue colour, prepared from *lapis lazuli*, and commonly called ultramarine. Sp. gr. 2·95. The massive is nearly opaque, and its blue colour is not uniform. Chief localities, China, Persia, Bucharia, and Siberia. The finer kind is prized by the lapidary, and the common in the manufacture of toys.

Azyme, unleavened bread used by the Jews.

B

B. As a numeral, was used by the Greeks and Hebrews and now by the Arabians to denote 2; by the Romans for 300, and with a dash (thus B̄. for 3000.

Babai. Celeated Basil. This is very common in all the Aimere fields: the leaves have a very fragrant smell, exactly like verbena; the plant is used in the preparation of insect powder.

Babar, or **Allon**, a stinging nettle from the fibres of which the natives of India make a kind of thread.

Bablah, *Neb-Ueb*, the rind of the fruit of the *Mimo cineraria*. It is used as a substitute for the more expensive dye stuffs, and for communicating shades of brown to cotton. The plant is a native of Senegal.

Babool Gum, largely produced and well-known in commerce as the produce of the *acacia arabica*. It is largely used in India as a substitute for the true gum arabic, the produce of the *acacio verd*.

Babylonica Texta, a rich sort of weavings or hangings, so denominated from the city of Babylon, where the practice of weaving divers colours in their hangings was first invented.

Back, in brewing, a large flat kind of tub or vessel, in which the wort is put for cooling. The ingredients for beer pass through three kinds of vessels; they are mashed in one, worked in another, and cooled in a third.

Back *the sails* is to put them in a situation that will occasion the ship to retreat or move a-stern.

Back board, on board ship is a piece of wood placed across the after part of a boat against which the passengers lean.

Bacon (Ger. *Speck*, Du. *Spek*, Da. *Flesk*, Sw. *Flask*, Fr., *Lard*, It. Sp. and Port. *Lardo*, Rus. *Solo*) is made from the sides and belly of the pig, which are first thoroughly impregnated with salt, then suffered to remain for a certain period in brine, and lastly dried and smoked in places called drying houses. The cold months are the most favourable for curing. The counties particularly noted for producing excellent bacon are Yorkshire, Hampshire, and Wiltshire, but for a number of years past the Wigtown, Dumfries, and Kircudbright hams and bacon have advanced into almost equal favour. The hogs in Scotland are of mixed breeds, and those of Ireland are usually of a large size and course form. In England the chief are the Chinese hog, of eastern origin, small in size, delicate of aspect, and remarkable for its fecundity and disposition to fatten; the Neapolitan, smooth and black, also highly prolific, though not hardy; the Berkshire, middle-sized and reddish white colour, with brown or black spots. "The characteristics of a good hog are:—The chest should be deep and broad, the limbs largely arched, the neck short, and the head and limbs small; the bristles should be soft approaching to hair, and the skin soft and elastic." The hogs in England in 1869 were 1,629,550, and in 1870, 1,810,901. In Wales, in 1869, 171,675, in 1870, 198,547. In Scotland, in 1869, 129,227, in 1870, 158,690. In Ireland in 1869, 1,079,793, in 1870, 1,459,332. Isle of Man in 1869, 4,668; in 1870, 6,332; Jersey, in 1869, 7,176, in 1870, 7,450; Guernsey, in 1869, 6,305, in 1870, 6,478. Total for United Kingdom, 3,028,394 in 1869; in 1870, 3,640,730. Besides this country's live stock upwards of 100,000 pigs are imported every year from abroad.

Baden, a German grand duchy on the right bank of the Rhine, W. of Switzerland and the Lake of Constance, W. of Wurtemburg, S. of Bavaria and Hesse Darmstadt, and E. of the Palatinate of Bavaria. *Pop.* 1,438,672. *Area*, 5,910 English square miles. *Divisions*—Lake Constance, Upper Rhine, Middle Rhine, and Lower Rhine. *Towns.* Manhein, *pop.* 34,017; Carlsruhe, 32,004; Fribourg, 20,792; Heidelberg, 18,327; Pforzheim, 16,417; Rastatt, 10,726. Total actual revenue, 18,680,327 florins, £1,556,694. Total actual expenditure, 19,628,116 florins, £1,635,676. Public debt £11,570,461. *Produce.* The people are principally engaged in agricultural pursuits. The surplus yield of grain is sold in the markets of France and Switzerland. Tobacco, hemp, and flax are cultivated extensively, also the vine on the high lands skirting the Rhine and Maine. *Minerals.* Mining is not carried on to any great extent; there are alum, sulphur, vitriol, silver, iron, copper, lead, coal, cobalt, potters' clay, marble, alabaster, jasper, onix, garnet, and agate. *Manuf.* The most extensive are those of coarse and medium linens, woollens and cotton goods, and a variety of fancy articles, such as musical boxes, wooden ornaments, &c. Watch and clock-making is carried on briskly, and a considerable business is done in straw hats. *Exports.* Timber, grain, oil, wine, hemp, linen, tobacco, iron wares, &c. *Imports.* French dry goods, and colonial produce, drugs, dyes, iron, cottons, silks, &c. *Money.* The florin, average rate of exchange, 1*s.* 8*d.* *Weights and Measures.* The centner = 110 lb. avoirs.; the morgen = 0·89 acres.

Badian or Badiane. Indian anniseed: the seed of a tree which grows in China, and swells like our aniseed. The Chinese sometimes use the badian to give their tea an aromatic taste.

Badla. In Bombay a kind of gold or silver thread, worth one rupee and a half per tola, Bombay valuation.

Baetar, a kind of woollen cloth made and woven in Spain.

Baffetas or Baslas, a cloth made of coarse blue and white cotton thread principally for the East Indies.

Bag. A great variety of articles in commerce are sold by the bag, which means no more than that the bag, being made of a determined size, is supposed to contain a certain weight, which is taken in the gross without weighing, for the sake of expedition. A bag of hops is from 2¾ to 3 cwt.; of almonds 3 cwt.; of aniseed. from 3 to 4 cwt; of pepper, from 1¾ to 3 cwt.; of goats' hair from 2 to 4 cwt.

Bagauz, a name given to the sugar canes after they have passed through the mill in the West Indies; they are kept under cover in the small huts in order to use them when dry for boiling the sugar. The huts are called the bagauz huts.

Bagdad, the capital of a Turkish pachalic of the same name, is an important mart for Arabian, Indian, and Persian productions. *Lat.* 33° 19′ 40″ N. *Lon.* 44° 24′ 45″ E. *Pop.* 80,000. The principal manufactures are yellow and red leather, silk, cotton, and woollen cloths. Of late years the trade of this city has declined a good deal, owing, in a great measure, to the weakness and inability of the Government to put a stop to the exactions of the Arabs.

Bagging, a coarse hempen fabric made principally at Dundee, and used as a wrapper for cotton, wool, coffee, &c.

Bahamas (*The*). A group of islands of various magnitudes between Hayti and Florida, belonging to Great Britain. The most important of the group is New Providence, the capital of which, Warsaw, is the seat of government. This island lies in *lat.* 25° 29′ N., and in *long.* 76° 34′ W., and extends about 21 miles from E. to W., and 7 from N. to S. The chief articles of produce are Indian and Guinea corn, potatoes, yams, beans, cotton, and fruit of various kinds. The extent of pasturage for the support of 1,500 horses, 2,765 horned stock, 7,890 sheep and goats, and 4,000 pigs, is about 12,000 acres. The principal article of export is salt, of which about £20,000 is exported annually. Dye and other useful woods are exported, and the aggregate value of this branch of the trade is about £100,000 yearly. The imports consist of flour, corn, cotton and linen manufactures and hardwares. The number of tons of shipping employed is about 35,000.

Bahar, a weight used in the East. There are two: the great bahar, with which are weighed pepper, cloves, nutmegs, ginger, &c., and contains about 5 cwt. and 14 lb. 9 oz. avoid. weight; and the little bahar, used for weighing quicksilver, vermillion, ivory, silk, &c., containing about 437 lb. 9 oz.

Bahia, cap. of the maritime province of Brazil of the same name. *Lat.* 13° 0′ 30″ S. *Lon.* 38° 30′ W. *Pop.* about 150,000. One of the largest and most important cities of S. America. Its harbour is one of the best known; it may be entered at any time, either day or night; and ships of considerable burthen may anchor immediately abreast of the town. The exports consist principally of sugar, cotton, and coffee. Tobacco, hides, horns, rice, and fancy woods are also exported. The most important articles of import are cotton manufactures, woollen and linen stuffs, fish, flour, earthenware, wine, and hardwares. The value of the imports is estimated at about 2 millions yearly, of which those from the United Kingdom amount to about one half. *Shipping.* Vessels in distress pay no tonnage dues, but others pay 30 reis per ton, Brazilian measurement.

Baile or Bale, among seamen, is throwing the water, by hand or small vessel, out of the ship's hold or boat's bottom. They also call those hoops that bear up the tilt of a boat its bails.

Bailloque or Bayoque, those ostrich feathers which are of a dark brown colour, tinged with white. This kind of feather is seldom dyed; but the feathers are well washed with soap, which gives them a bright glossy appearance. These bailloque feathers are the least valued.

Baiocao or Bayoc, a copper coin of the Papal States, ten of which make a julio, and a hundred a Roman crown. The baiocao passes for about three farthings English.

Baize (Ger. *Boy*, Du. *Baay*, Sw. *Boj*, Fr. *Bayetta*, It. *Bajetta*, Sp. *Bayeta*, Port. *Bueta Baetilha*), a coarse, open, woollen stuff, having a long nap, sometimes freized. It is manufactured chiefly at Chichester, Colchester, and Rochdale. This article was first introduced into England with soap, serges, &c., by the Flemings. It is used greatly as linings for the army.

Bajra, a common grain found in the East, and made into cakes by field-labourers principally. It is sour at the beginning of the Monsoon.

Baker, a person whose occupation or business is to prepare bread, or to reduce meals of any kind, whether simple or compound, into bread, biscuits, &c. Bakers were a distinct body of people in Rome nearly two hundred years before the Christian era, and it is supposed that they came from Greece. To these were added a number of freemen, who were incorporated into a college, from which neither they nor their children were allowed to withdraw. They held their effects in common, without enjoying any power of parting with them. Each bakehouse had a *patron*, who had the superintendence of it; and one of the patrons had the management of the others and the care of the College. So respectable were the bakers of Rome, that occasionally one of the body was admitted among the senators. Bread is made of flour, mixed and kneaded with yeast, water, and a little salt.

Bakkul, the fibrous bark of the roots of certain trees, which is used in Malwa as a cheap substitute for string and cord.

Balachoug (Malay) *Balachu*, Jav. *Tasi*, Phillip. *Bagon*), the name of a condiment made of prawns, sardines, and other small fish, pounded and pickled. It is one of the chief articles of native consumption throughout both the Malay and Philippine Archipelago. Its use is not, however, confined as a condiment to the Asiatic islanders, but is also largely used by the Burmese, Siamese, and Cochin-Chinese. It is essentially the same article, says Crawfurd, known to the Greeks and Romans under the name of Garum, the produce of an Engraulis, a fish of the Mediterranean.

Balance (Ger. and Du. *Waagen*, Fr. *Balances*, It. *Bilancie*, Sp. *Balanzus*), in mechanics, one of the simple powers which serve to find out the equality or difference of weight in heavy bodies. The *balance* is of two kinds, ancient and modern: the ancient, or Roman, called the *Statera Romana*, or steelyard, consists of a lever, or beam, movable on a centre, and suspended near one of its extremities: on one side the centre is applied to the bodies to be weighed, and their weight measured by the divisions marked on the beam in a place where a weight, movable along the beam being fixed, keeps the balance in equilibrium. The modern balance consists of a lever, or beam, suspended exactly by the middle, and a scale suspended at each extremity. The principle on which each is founded is the same.

Balance, *in accounts*, is when the debtor and creditor sides of any distinct account are equal. When that is the case, such account is said to be balanced.

Balance *of trade*, a term employed to express the equality between the value of the commodities bought of foreign merchants and the value of the native production. It was introduced by the supporters of a theory, now happily exploded, that "wealth consists of the precious metals; that what is gained in trade by one nation must be lost by another, and that our great object in recovering returns should be to get merchandize." Now it is "admitted that the wealth of States and of individuals consists, not in money alone, but in the abundance of their whole disposable products; that gold and silver are commodities subject to the same general rules in their transmission as sugar, tobacco, or any other commodities, namely, sent from where they are of lower to where they are of higher value, and never exported except for the purpose of importing some more valuable article in return; that in the case of what is called an unfavourable balance, bullion is not imported unless it be at the time the cheapest exportable commodity, and that, in point of fact, its exportation (except from mining countries) as well as its importation, can take place only to a limited extent."

Balanus, the *ben-nut*. The tree which produces this fruit grows wild in the mountains of Arabia. The extract from the nut is used by perfumers for preserving scents.

Balas Ruby, a term used by lapidaries in designating those varieties of spinel that are rose-red. It is a gem of much beauty and value, but it should be carefully distinguished from the oriental gem, which is its superior in variety and importance.

Balastri, a fine gold cloth sold in the market of Smyrna.

Balazees are white cotton cloths manufactured in Surat. They measure 13¾ French ells in length, and two-thirds in breadth.

Bale, a pack, or certain quantity of goods or merchandize, enclosed in a wrapper. If for abroad, the bale is usually packed in tarpauling and canvas, and if for the country, in canvas only. A bale is always marked and numbered in a way that corresponds with the marks and numbers on the bill of lading or carriage note.

Balks (Ger. *Balken*, Sw. *Balken*, Fr. *Poutres Solives*, It. *Travi*, Sp. *Vigas*) is the term used to signify large pieces of timber brought from Norway, &c., and among bricklayers, the large beams used in making scaffolds, &c.

Ballast (Ger. *Ballast*, Fr. *Lest*, It. *Savorra*, Sp. *Lastre*), a quantity of stones, gravel, or sand, laid in a ship's hold in order to make her draw the more water, and render her stiffer or more capable of carrying sail without oversetting. The ballast is sometimes one-quarter or one-third of the ship's burthen, according to the difference of bulk. Flat vessels require the most ballast.

Balastage, a toll paid for taking up ballast by shipping.

Balsam (Ger. *Balsam*, Fr. *Baume*, It. and Sp. *Balsamo*), an oily, resinous, liquid substance, flowing either spontaneously or by means of incision from certain plants of sovereign virtue in the case of several disorders. There are many kinds of balsam, but the most remarkable are benzoin storax, balsam of Peru, and balsam of Tolu. They owe their most important properties to the resinous ingredient. 1. *Benzoin*. This substance is obtained from the *styrax benzoin*, a tree found in Sumatra and elsewhere in the same latitudes. It flows from incisions made in the trunk. It comes to Europe in large masses of a light brown colour with yellow specks. It is very brittle, and breaks vitreously. When rubbed it emits a fragrant odour, and, when heated sufficiently, lets the benzoic acid escape. 2. *Storax* is obtained by incision from the *styrax officinalis*, a tree found growing abundantly in the Levant. The storax is sometimes in large masses, sometimes in small tears. It is brittle and has a brown colour. It has an aromatic taste and fragrant smell. It is soluble in alcohol, and yields benzoic acid by the usual processes. 3. *Styrax*. This is a semi-fluid juice obtained from a tree in Arabia. Its colour is greenish, its taste aromatic, and its smell agreeable. It is easily volatilized by heat. 4. *Balsam of Peru* is obtained from a tree growing in the warm parts of South America. The tree is full of resin, and the balsam is procured by boiling the twigs in water. It has the consistency of honey, a brown colour, an agreeable smell, and a hot, acrid taste. *Balsam of Tolu*. The tree from which it is obtained also grows in South America. It flows from incisions made in the bark, and comes to Europe in shells. It is of a reddish-brown colour and considerable consistence, and when exposed to the air it becomes solid and brittle. Its smell is fragrant. Such are the principal balsamic substances known. *Tar*, which has been sometimes placed among them, is obtained by a rude distillation of the fir; hence it contains a variety of ingredients, oil, resin, pyroligneous acid, and water.

BALSAM *Capivi* is of a whitish yellow colour, and of a fluid, resinous, and balsamic consistence. It flows by incisions from a tree of moderate size which grows in Brazil, whence the balsam comes.

BALSAMICS, in pharmacy, softening, restoring, healing, and cleansing medicines of gentle, ternating principles very friendly to nature. *Hoffman*.

BALTIMORE, a city and port of entry of Baltimore, County Maryland, U.S. *Lat.* 39° 17′ N. *Lon.* 76° 37′ W. *Pop.* 220,000. It is 38 miles by rail N.E. from Washington, and 98 miles S.W. from Philadelphia. The bay around which it is built affords a secure and spacious harbour, and it has communication by rail with not only the cities named, but with Winchester, Annapolis, Cumberland, Frederick City, York, Lancaster, and Harrisburg. In commercial importance Baltimore ranks among the first cities in the U. S. Its position is such as to render it a great centre of trade, and being at the head of Chesapeake Bay it enjoys many advantages for foreign commerce. There are 19 banks, with an aggregate capital of about 12,500,000 dollars; three savings banks; three marine insurance companies, and 16 fire and life companies. Intimately connected with the city is the Baltimore and Ohio Railroad which has an equipment of about 300 locomotives and 4000 cars, and, in addition to its other freight, frequently brings down upwards of 2500 tons of coal a day. *Agricultural and mineral productions of the State*, from which Baltimore derives much of its importance. Maryland contains 4,835,571 acres of land, of which, in 1860, 3,002,267 were in an improved, and 1,833,304 in an unimproved, condition. The number of farms was 25,494; their average size 190 acres. The cash value was estimated at 145,973,677 dollars. The principal crops grown are wheat, Indian corn, and tobacco. These produced respectively in 1860, 6,103,480 and 13,444,922 bushels and 38,410,965 lb. Coal holds a very important place in the mineral productions. There are three distinct fields or basins. The first is the Potomac or Cumberland coal field. It is about 50 miles long, by from 5 to 9 miles broad, with an average thickness of 14 feet. The coal is of excellent quality, being very free from gas, and admirably adapted for making steam. The second region is the Meadow Mountain Coal Field, with an area of 50 square miles. It is believed to be about 6 feet thick, and is of a very good quality. The third basin is styled the Youghwgheny, from the name of that river which flows through it. The miners are paid 75 cents a ton, and a good hand will break five tons a day. They are principally Irish, Scotch, and Germans. Iron ores exist in great abundance throughout the State, and have, at various times, been extensively mined. Carbonate of iron, brown hematite, and bog ore are the kinds most in use. Veins of magnetic oxide and specula oxide of iron are known to exist, but have not been worked. Extensive deposits of chrome ore have been found, and large fortunes made by those engaged in mining it, and in the manufacture of bichromate of potash. Traces of lead, zinc, manganese, and emery have also been found. There is one copper smelting company in operation at Baltimore, with a capital of 750,000 dollars. It has two establishments, jointly working reverberatory furnaces, giving employment to about 300 men. These works consume about 30,000 tons of coal per annum, and their current daily expenses are about 11,000 dollars. The ores smelted come from Chili, California, Canada, Vermont, North Carolina, and this State. The smelting business here is likely to increase, as several mines in the vicinity of the city are being developed, and a great many companies for working the very valuable copper mines of North Carolina. *Imports and Exports*. The imports of 1864 amounted to 6,076,299 dollars, and 1865 to 6,211,257 dollars. The exports for the same years, 12,362,448 dollars and 9,568,533 dollars. *Cotton*, 16,000 bales, against 10,000 in 1864, were brought to Baltimore in 1865. There are twenty manufacturing establishments in and around the city, which, when in full operation, would consume about 30,000 bales. The capital invested in these factories is 3,000,000 dollars; the number of hands employed, 2000; the amount paid for labour, per annum, about 600,000 dollars; and the values of the products 10,000,000 dollars. *Fish*. Owing to the repeal by the State Legislature of the inspection laws, by which this market was put on an equal footing with those to the north of it, the imports of fish, both foreign and domestic, have largely increased. *Grain*. The average receipts at the Corn Exchange were 6,149,669 bushels in 1865 against 5,158,333 in 1864. *Oysters and canned fruit*. This business, which a few years ago was in its infancy, has now attained very large proportions. Forty houses, employing about 2000 white and 1000 negro hands, are engaged in the trade. The oyster season lasts from September 1st to June 15th, during which time about 4,000,000 bushels are brought to this market, of which quantity the packers use 3,500,000. The produce is above 13,500,000 cans of oysters, packed raw (iced), and some 2,500,000 hermetically sealed. About 1000 vessels, of 50 tons each, are employed dredging for oysters, and some 500 in bringing them to market. The average price is about 50 cents a bushel. About the same number of cans of fruits and vegetables are put up during the summer, and the value of the annual produce is estimated at 3,000,000 dollars. *Shipping.* The number of British vessels that entered in 1865 was 207 vessels, 49,216 tons, with cargoes valued at 3,471,400 dollars; and the number cleared was 171 vessels, 39,467 tons, with cargoes valued at 3,471,400 dollars. The tonnage dues are 30 cents per ton. All vessels of 60 tons and upwards pay harbour dues at the rate of 2 cents per ton. *Merchant's Commission.* On sale of foreign merchandise, 5 per cent; domestic goods, 2½; on purchase or sale of vessels, 2½; on procuring freight or passage, 5; on collecting freight, 2½. *Weights.* Articles usually sold by the cwt. of 112 lb. are sold by the decimal hundred of 100 lb. A draft of ½ per cent. is allowed on all weights. In estimating contents in cubic feet, 5 feet is the standard for a flour barrel; 15 for a tierce of rice; 5 feet for 5 bushels of grain in bulk.

Bamboo, a plant which multiplies very much at its root, whence springs a ramous or branchy tuft, after the manner of the European reeds. The Indian bamboo is the largest kind of cane known. "No plant is more useful where a union of strength and lightness is required. In building it is so generally employed that the houses of the inferior classes in India are almost exclusively constructed from it. It is adapted to the formation of bridges, masts for boats, and almost every article of domestic furniture. Bedding and sacking, and even cordage, are manufactured from it. It is the common fence for gardens and fields, and palanquins and light carriages are principally composed of it. The hollow stems serve for water-pipes, and in military operations it has often been resorted to for the construction of screens. Finally, according to Barrow, the Chinese find the bamboo invaluable for keeping the whole empire in due subordination through the means of bastinadoing." Two pieces of bamboo of a certain size rubbed hard together will produce fire. The Malays and the Chinese, who are dispersed in the Molucca and Sunda Islands, eat the young shoots of the bamboo preserved in vinegar, with strong or peppered ingredients.

Bamboo Paper, a kind of paper made out of the bamboo. Large water tanks are constructed in the fields for the purpose of steeping the bamboo stems. They are steeped for a long time in a solution of lime. They are then taken out and beaten upon stones until they become quite soft, or till all the flinty matter which abounds in their stems is removed.

Ban, a fine smooth muslin manufactured in

the East Indies. The breadth is nearly a yard, and in length it runs about 20½ yards.

Banco, an Italian word signifying a bank, and employed in describing the bank money of Hamburgh and other places.

Band, a weight used on the Gold Coast for weighing gold dust. It is equal to 2 oz. troy.

Bandala, the name given in the Philippine Islands to the fibre extracted from the larger and stronger outer layers of the Manilla hemp plant. It is used in the fabrication of cordage.

Bandal or Bandle, an Irish measure used in selling coarse narrow linen. It is about half a yard.

Bandana, a term given to a particular kind of calico printing; also to a kind of silk or imitation silk handkerchief with bright figures. Glasgow is the chief seat of this industry.

Banff, a maritime county of Scotland, bounded N. by the Moray Frith, S. and E. by Aberdeenshire, and W. by the counties Elgin and Inverness. *Pop.* 62,010. *Area*, 439,219 stat. acres. *Occupiers of land*, 4,082. Average extent held by each, 39 acres. Average under crop of all kinds, bare, fallow, and grass, 158,392. *Under corn crops.* Wheat, 439 acres; barley or bere, 6,357; oats, 54,304; rye, 261; beans, 263; peas, 73 acres; total, 61,696 acres. *Green crops.* Potatoes, 2,825; turnips and swedes, 24,933; mangold, 1; carrots, 2; cabbage, kohl rabi and rape, 5; vetches, lucerne, and other green crops, 536; total 28,303. Flax, 4 acres; bare, fallow, and uncropped arable land, 270 acres; clover, sanfoin, and grasses in rotation, 60,092; permanent pasture, meadow or grass, not broken up, in rotation (exclusive of heath or mountain land), 8,028 acres. *Live stock.* Horses, 7,074; cattle, 41,503; sheep, 47,556; pigs, 3,754. *Minerals*, marble, limestone, ironstone, granite, marl, slate, topazes, and rock crystal. *Manufactures.* Linen and yarn, but production small, and for county consumption.

Bangles [Hind. *Bangreean*]. The name given to the wrist and ankerings so generally worn by Orientals. The Chinese make them of a clouded or plain vitreous substance, to imitate pavestone or chalcedony. They are packed in boxes containing one thousand pair each box, estimated to weigh a picul. Bangles are imported into, and also exported from Madras. The tariff valuation of these articles is for country glass bangles 150 rupees per cwt. (*£15*): broken glass bangles, 3½ rupees per cwt. (*7s.*): china gilt glass, 8 rupees per 100 pairs (*16s.*); lac bangles, 5 rupees per 1,000 (10s.).

Bangra, the name of a cloth fabricated from the gigantic stinging-nettle of the Nipaul and Sikkim hills. It is hard, stiff, and durable.

Banians, a tribe of Indians dispersed all over Asia, through whose hands passes a large part of the trade with Europeans. They are the third sect of the natives of India. They are uncommonly skilful as traders, and possess the command of large sums. They are likewise bankers and brokers to the English, French, and German merchants engaged in business in the East. When an European opens a house of business, he employs a Banian to sell his goods, purchase produce, and make advances on shipments, for which he receives a commission. His services are necessary because long credit is often requested by the buyer, who may be a perfectly safe man, but a stranger to the merchant. The broker guarantees the sale, and takes his own means to obtain payment. In the leading firms it is usual to debit the broker with all sales, and only deliver the goods to his order: he has it thus in his own power either to trust the buyer, or hold back the purchase until the money for it is paid. From the due date of the agreement between the merchant and the buyer, the broker is also debited with interest, usually at 9 per cent., and is credited at the same rate for the advances which he is required to make. When the firm buys produce, the broker pays the seller, and is credited by the merchant; and when the bills of exchange drawn against the shipment are sold, the proceeds are handed over to him, with a debit note. He is in fact a banker and broker on the premises, through whose books the whole business of the firm passes. He has his own offices and staff of clerks, and is kept constantly informed as regards the course of the market, the arrival of up-country dealers, and the changes taking place in commercial circles in London and elsewhere.

Bank *at Sea* denotes an elevation of the ground at the bottom of the sea, so as sometimes to surmount the surface of the water, or at least to leave the water so shallow as usually not to allow a vessel to float over it. In this sense, bank amounts to much the same thing as flat, shoal, &c. There are banks of sand and others of stone, also shelves or rocks. In the north sea are banks of ice, which are huge masses of that substance floating about. Vapours at sea sometimes occasion such a deception, that sailors imagine they see land with trees, &c. They are called fog-banks. A long, narrow bank is sometimes called a rib. The bank, main bank, or great bank, denotes technically that of Newfoundland, the region of the cod fishery. It is called the great bank, not only by reason of its vast extent—being, according to the English computation, two hundred miles long—but also on account of several similar smaller banks near it, where cod are also caught. Banks that are dangerous are usually distinguished by a buoy, post, or the like. On charts, sandbanks are usually marked by little dots, and banks of stone by crosses. An exact knowledge of the banks, their extent and the depth of water on them, forms the most essential part of the science of a pilot or a master of a ship.

Banks, establishments where money is deposited for safe custody, and issued according to the requirements of the depositor; also where advances are made on securities of properties and on the credit of customers; where also facilities are offered for the payment of money by one person to another; and where bills of exchange are bought, issued, and discounted. It is generally supposed that the word *bank* comes from the Italian *banco*, a bench whereon the ancient money-changers sat in the public markets; or, as others think, a table whereon they told their money; whereas, says Macleod, "this derivation is a pure delusion. In the first place, the money dealers or money changers, as such, were never called banchieri in the Middle Ages. They were called Cambiatores, Speciarii. Campsores, Argentarii, Nummularii, Trapezitæ; and those who lent money were also called Danistæ, Collybistæ, and Mutuatores, but not banchieri; and their places of business were called *casane*, and not banchi. Muratori himself says that the Italian *banca*, or *banco*, is derived from the Gothic or Scandinavian Banck, a heap or mound. The true meaning of *banco* is a heap or mound." The beginning of traffic was by exchanging one commodity for another, as men could best suit each other's occasions. But their necessities becoming so various and different, in respect to the quantity and quality of requisition, money was instituted as the most convenient medium for commerce, whereby people might procure whatsoever they stood in need of, in quantities according to their exigencies. Yet this way of payment is attended with many inconveniences, as the trouble in counting the money, hazard in securing it from the attempts of thieves, and loss from trusting it with unfaithful servants; for the prevention of all which, cities of large commerce introduced the use of banks. Banks are of two kinds—either *public*, consisting of a company of moneyed men, who, being duly established and incorporated according to law, agree to deposit a considerable fund or joint stock to be employed for the use of the society, in lending money upon security, buying and selling bullion, discounting bills of exchange, &c.; or *private*, *i.e.*, set up by private persons or partnerships, who deal in the same way as the former upon their own single stock or credit.

Bank of England. This is the greatest public bank in the world. It was first introduced in the year 1694, upon a plan suggested by Mr. Patterson, a merchant of great eminence, occasionally to supply the exigencies of Government, and, as he termed it, "to save the ministerial people the disgrace of stooping so frequently to solicitations to the London Common Council for the borrowing of only one or two hundred thousand pounds, upon the credit of the land-tax; as the Common Councilmen did to the private inhabitants of their wards, going from house to house for the loan of the money." After the scheme had been debated for a long while in the Privy Council, the plan was at length adopted, and the company was incorporated by Parliament in the

5th and 6th of William and Mary, by the name of the Governors and Company of the Bank of England, in consideration of the loan of £1,200,000 to the Government, for which the subscribers received almost 8 per cent., and in addition were allowed to create and issue notes equal to the amount of their capital for the purposes of trade. In 1697 the capital of the Bank was increased by one million sterling: and by an act passed in the 7th of Queen Anne, the amount was raised to £4,402,343. In the third year of George I., the interest of the capital stock was reduced to 5 per cent., when the bank agreed to deliver up as many Exchequer Bills as amounted to £2,000,000, and to accept an annuity of £100,000; and it was declared lawful for the Bank to call from their members, in proportion to their interests in their capital stock, such sums of money as in a general court should be found necessary. Up to 1711, the issues of the Bank were strictly limited to the amount of its capital, but afterwards, till 1844, it possessed the power of unlimited issue. The capital had reached the sum of £9,000,000 in 1727, £10,780,000 in 1746, £11,642,400 in 1782, and £14,553,000 in 1816. In 1797 the Bank was placed in a very critical position by the failure of several country banks, and heavy demands from all quarters for gold; and on the 26th February, under an order in Council, stopped payment in cash, the order prohibiting the Directors from paying their notes in cash until Parliament had met. The restriction Parliament confirmed, and appointed a committee of investigation, from whose report it appeared that the bank was possessed of property to the amount of £15,513,690, after all claims had been deducted. In July, 1844, an Act was passed that "the issue of Bank notes by the Bank of England shall be be kept wholly distinct from the general banking business;" and that "the Governor and Company shall transfer, appropriate, and set apart to the issue department, securities to the value of £14,000,000," of which the debt due by the public to the Bank was to be a part; and also so much of the gold coin and gold and silver bullion as should not be required for the banking department. The issue department was then to deliver over to the banking department an amount of notes exactly equal to the securities in coin and bullion so deposited with them. The bank was then forbidden to increase the amount of securities in the issue department; but it might diminish them as much as it pleased, and increase them again to the limit defined. All persons were to be entitled to demand Bank notes in exchange for standard gold bullion at the rate of £3 17*s.* 6*d.* per ounce. The object of the Act was to take the regulation of the currency away from the directors of the Bank, by placing an absolute limit upon the directors of the Bank in issuing notes. Capital after this enactment accumulated rapidly till August, 1846, when it declined steadily, owing to the quantity of bullion required to pay for the foreign grain imported to supply the place of potatoes, after the failure of the crops in Ireland. For a little in May, 1847, bullion began to return; this caused a tremendous fall in the price of wheat, and a frightful catalogue of failures was the result. The pressure on the Bank's resources now grew so great that the Ministry determined to authorise the Bank to issue notes beyond the limit prescribed by the Act; and when this was made known, the panic was at end. "No sooner was it known that notes might be had, than the want of them ceased! Not only did no infringement of the Act take place, but the whole issue of notes in consequence of this letter [of authorization] was only £400,000; so that while at one moment the whole credit of Great Britain was in imminent danger of total destruction, within one hour it was saved by the issue of £400,000." In the crisis of 1857 the Bank was again saved by the interposition of the Government, and also in May, 1866. *Management of the Bank.* The operations of the Bank come under three distinct heads. The first relates to the general circulation or circulating medium of the country; the second to its transactions with the Government, by loans, payments of dividends, &c.; the third to its commercial discounts. But we need not in this place deal with the management of the Bank, except as regarding the business transacted with it by the mercantile and trading classes. The mode of conducting business is as follows:—All respectable persons in a condition to require a banking account may open a *Drawing account*—that is, deposit a sum of money for safe custody, and withdraw it by cheques as required. The Bank takes charge of bills, securities, and plate for customers, and, unless their accounts are considered remunerative, a small commission is charged for its trouble and outlay. *Discount accounts* are opened on application, provided the bills presented for discount represent *bonâ fide* transactions, and have upon them two approved names. No interest is allowed on deposits; no account is allowed to be overdrawn, and no advances are made "upon any description of landed or other property. The Bank undertakes to buy and sell all kinds of Government securities, and grants drafts for sums of £10 and upwards at seven days' date, without acceptance. The following are the regulations of the Bank:—1. All letters should be addressed to the chief cashier. 2. Drafts should be drawn upon cheques furnished by the Bank. 3. Cheques upon City bankers eastward of King-street, Cheapside, paid in by 12 o'clock, may be drawn for after 1; paid in by 2 oclock, may be drawn for after 3. 4. Cheques paid in after 2 and before 3 o'clock, and cheques upon all other London bankers paid in before 12 o'clock, may be drawn for on the following morning. 5. Cheques paid in after 3 o'clock are sent out at 9 o'clock the following morning, and may be drawn for as soon as received. 6. Cheques on country bankers paid in before 11 o'clock (on Saturday 10 o'clock) will be collected through the country clearing and go to account two days after date of paying in. 7. Dividend warrants are received at the drawing office until 4 o'clock in the afternoon for all persons having accounts at the Bank. 8. It is requested that notice be given at the drawing office of bills accepted payable at the Bank with the date of their maturity. 9. Persons keeping a drawing account with the Bank (although not having a discount account) may tender bills for discount through the drawing office. Applications for discount, or for advances on stock, &c., must be made before 2 o'clock. 10. Bills of Exchange and notes not paid when due, will be noted. 11. The Bank will make purchases or sales of British or foreign securities upon an order in writing addressed to the chief cashier, and dividends on stock may be received under powers of attorney granted to the cashiers of the Bank. 12. Exchequer Bills, bonds, railway debentures, &c., may be deposited, and the interest when payable will be received and placed to account. 13. Credits paid in to account are received without the Bank book, and are afterwards entered therein without the party claiming them. 14. Notes of country bankers payable in London are sent out the same day for payment if paid in before 3 o'clock. 15. The pass books should be left at the drawing office at least once a month to be written up. 16. Where post bills are required or a payment is to be made to any office of the Bank by a cheque on the Bank of England, the cheque must be presented at the office on which it is drawn and exchanged for an order on the post bill office or on the office where the payment is to be made. 17. Cash boxes taken in, contents unknown, for such parties as keep accounts at the Bank. 18. A person having a drawing account may have a discount account; but no person can have the latter without having also the former. When a discount account is opened the signatures of the parties are entered in a book, and powers of attorney are granted empowering the persons named in them to act for their principals. Bills of Exchange having more than 95 days to run are not eligible for discount. N.B. All changes in the residence of persons keeping cash at the Bank are requested to be made known at the drawing office. *Transfer days.* The transfer days are now Tuesdays, Wednesdays, Thursdays, and Fridays. Dividends are due at the following dates after an interval of three days, or if a Sunday intervenes of four days. Bank stock, April 5, Oct. 10. 3 per Cent. Consol. 3 per Cent. 1726, Jan. 5, July 5. 3 per Cent. Reduc., New 3 per Cent. Annuit., April 5, Oct. 10. New 5 per Cent. Annuit., East India Stock, Jan. 5, July 5. East India Bonds, Mar. 31, Sept. 30. Old 3 per Cent. Annuit., April 5, Oct. 10. 3 per Cent. 1751, New 2½ per Cent., Jan. 5, July 5. Tickets for preparing transfers of stock must be given in at each office before 1 o'clock: transfer at the Bank must be made by half-past two o'clock. *Expense of transfer.* Bank stock not exceeding £25, 9s.; above that sum, 12s. India stock, £1 10s.; non transfer days, 2s. 6d. extra. Transfers in Consols and other Government Stocks are exempt from duty."—*Maculloch's Dictionary.*

Bank of Venice, called *Banco del guira*, was established in the middle of the twelfth century, and till the invasion of the French in 1797, which caused its ruin, was the most ancient bank in Europe. It was properly a board of public credit and interest; or a general and perpetual purse for all merchants and traders; established by a solemn edict of the commonwealth, which enacted that all payments of wholesale merchandize and letters of exchange, shall be in bonds or bank notes, and that all debtors and creditors shall be obliged, the one to carry their money to the bank, the others to receive their payments at banco; so that payments were made by a simple transfer from the one to the other. By means of this bank, the Republic of Venice, without encroaching on the freedom of commerce, or without paying any interest, became mistress of 5,000,000 ducats, to which the capital of the bank was limited to be in readiness for any pressing occasion; the Republic being the security for the capital sum. *Bank of Amsterdam.* Previous to the year 1609 the great quantity of cleft and worn foreign coin, which the exclusive trade of Amsterdam brought from all parts of Europe, reduced the value of its currency about 9 per cent. below that of money fresh from the mint; such money no sooner appeared than it was melted down or carried away as it always is in such circumstances. The merchants with plenty of currency could not always find a sufficient quantity of uncleft money to pay their bills, and the value of these bills, in spite of several regulations, became in a great manner uncertain. In order to remedy these inconveniences a bank was established in 1609, under the guarantee of the city. The bank received both foreign coin and the light and worn coin of the country, at its real and intrinsic value in the standard money of the country, deducting only so much as was necessary for defraying the expense of coinage and management. For the value which remained after the small deduction was made, it gave a credit in its books. This credit was called bank money, which, as it represented money exactly according to the standard of the mint, was always of the same real value, and intrinsically worth more than current money. It was at the same time enacted that all bills drawn upon or negotiated at Amsterdam, of the value of 600 guilders and upwards, should be paid in bank money, which at once took away all uncertainty in the value of those bills. The bank professing to keep its specie deposits intact, enjoyed the confidence of the trading public till about 1750, when it secretly lent part of its bullion to the East India Company, when suspicion of its good faith was aroused; but it was not until the invasion of the French that the bank authorities were obliged to declare they were unable to make up the sums deposited, and this occasioned the fall of the institution. *Bank of Hamburgh* was established in 1619 as a purely deposit bank, and its chief business is to transfer sums from the account of one person to that of another, and make advances on jewellery, &c., to the extent of three-fourths of the value pledged. *Bank of France* was established on a well defined basis, with a capital of 90,000,000 francs, in 1806. The shares were 1,000 francs each, 67,900 of which passed into the hands of the public. The remainder were subsequently bought up by the bank out of surplus profits and cancelled. This institution is the only authorised issuer of notes payable on demand in France. The administration of the bank consists of a council of twenty-one members, viz., a governor, and two sub-governors, nominated by the government, and fifteen directors, and three censors, nominated by the shareholders. Bills are discounted, having three signatures, and drawn not exceeding three months date. Advances are made on stocks and other securities, and similar services to those performed by the London bankers are performed for those who have accounts. *Bank of Scotland* was established in 1695, by Act of the Scotch Parliament. Its capital was £1,200,000 Scotch, equal to £100,000 sterling, but it was enlarged by subsequent Acts, until it reached £1,500,000. As the bank is constituted, the management is vested in a governor, deputy-governor, twelve ordinary, and twelve extraordinary directors, and the executive part is conducted by a treasurer and secretary, and other sworn officers. The bank receives money on deposit receipts or on current deposit accounts, and grants drafts on its agents throughout Scotland, and correspondents in England and Ireland. Interest is allowed on deposits. Bills on London or provincial towns of importance are discounted. Credit is given on cash accounts at any of its offices on bond with security. The security may be personal co-obligants, or such other security as may be specially agreed on. Applications for cash accounts are given into the office where the cash account is wanted, and must specify the credit desired and the security proposed; and the individual partners when co-partners are proposed. Cash accounts are granted by the directors only, and are not recalled unless by their special authority. It is understood that these credits are not used as dead loans to produce interest only. In the fair course of business, the advantage of the bank is consulted by an active circulation of its notes, and by frequent repayments to it in a way least affecting that circulation. We may here state that the terms on which the Scotch bankers accept of repayment of a cash credit are peculiarly easy and well calculated to assist frugal deserving persons who wish to commence business or engage in farming. Whoever has a credit of this kind and borrows £1000 upon it for example, may repay this sum piecemeal by £20 and £30 at a time, the banker discounting a proportionable part of the interest of the great sum from the day on which each of these small sums is paid in, till the whole in this manner be repaid. The advantage to the banks, says the Parliamentary report on Scotch banking, who give these cash credits arises from the call which they continually produce for the issue of their paper and from the opportunity which they afford for the profitable employment of part of their deposits. *Bank of Ireland* was initiated in 1783, with similar privileges to those of the Bank of England. Its capital amounts to £2,769,230 paid up, and its fixed issue is £3,738,428. Having through a clause in its charter, stating that "no other bank using notes shall consist of more than six partners," obtained the monopoly of the circulation, the private establishments found themselves unable to keep their doors open, and the consequence was that no fewer than forty stopped payment between 1804 and 1826, thus involving the country from time to time in immense distress. An attempt was made to procure the repeal of the obnoxious clause in the Act in question, and some relief was obtained in 1824 which led to the institution of the Northern Banking Company at Belfast, the Provincial Bank and others, but the trade of banking in Ireland is still restricted compared with that of Scotland. The Bank of Ireland issues notes for £1 and upwards, receives deposit and discount bills, but does not allow interest nor does it grant cash credits. *Private banks* are of earlier origin than the public. The royal mint in the tower of London had for some years prior to 1640 been made use of as a kind of bank or deposit for merchants to lodge their cash in. But Charles I. having in that year made free with their money, the mint lost its credit. We may date the commencement of private banking from the year 1645, which seems to have originated with the Goldsmiths' Company. The proper business of the London goldsmiths had always been to buy and sell plate, bullion, and foreign coins of gold and silver; to melt and cull them; to coin some at the mint; and with the rest to supply the refiners, plate makers, and merchants as they found convenient to the advantages of trade. But in consequence of the civil broils which broke out about this period of King Charles's reign, the merchants and principal traders began to lodge their money in the goldsmiths' hands for its greater safety. This became so much the fashion that in a very short time the banking scheme constituted a very considerable branch of business. The goldsmiths began to discount merchants' bonds and bills, both in town and from the country; and also began to receive the rents of gentlemen's estates remitted to town, and to allow them and others who put cash into their banks some interest for it, if it remained only a single month. This was a great allurement to people to put in their money, and an invention that brought an immense quantity of cash into their hands: so that they were enabled to supply government, as the Bank of England now does, with temporary sums, for which these bankers took ten per cent. And on bills, tallies, orders and debts due to the king, they sometimes got from twenty to thirty per cent. This great gain induced the goldsmiths more and more to become lenders to government; to anticipate all the revenue; to take every grant of Parliament into pawn as soon as it was given; so that in fact all the revenue passed into their hands. Thus they went on till the year 1672, when they had jointly and severally amassed of the public money £1,328,526, which was deposited for safety in the king's treasury, and whence they were wont to receive weekly, whatever sum or sums were required for their customers. At this time Charles II. happening to be much straitened for cash, he shut up the exchequer, and seized upon all the money to carry on his war with Holland. This violent measure bankrupted the goldsmiths, and brought, it is stated, thousands of families to poverty. A general murmur ran through the nation, and the public became so clamorous that the king, for his personal safety, was obliged to bind himself to pay the principal out of his revenue, and till that could be effected to allow an interest of six per cent. per annum; but the principal was never paid. However, the Parliament, 12 William III., cap. 12, provided for a large arrear of interest than due, and settled the interest at three per cent. for the future. The debt was hereby made redeemable on paying one moiety of the principal sum, viz., £664,263, further confirmed by an Act of Queen Anne, which moiety now became the proper debt of the public, and was finally subscribed into the South-sea capital stock in 1720. Several bitter invectives against the trade of banking were published at this time, and many years after when the custom of receiving and paying money in an open place came first to be introduced, it was looked upon with suspicion, and several authors wrote vehemently against it. The bankers were accused of being a pack of usurers; of keeping the interest of money at least two per cent. higher than otherwise it would be, which was productive of many evils; and also that they made money scarce among individuals by surreptitiously collecting all they could into their own possession, whereby the country was drained in every part and the subject injured. But notwithstanding the indignation assumed or felt in high quarters, the people began to find that bankers were very useful. The dispatch given by them to merchants and dealers in general was found so convenient to trade, that the public hastened to deposit money in their hands. RELATION BETWEEN BANKER AND CUSTOMER.—In an ordinary way of business the customer opens an account with a banker by placing in his hands a certain sum of money to be drawn out from time to time as required, and the banker undertakes either to pay or not pay interest on the money deposited, and cash the customers cheques or orders drawn against the account. In another and not uncommon relation, the banker and customer are in the position of borrower and lender, the former either on deposit of securities or obtaining the guarantee of some responsible person, allowing his customer to overdraw his account or making him advances of money. It is well to note that unless a banker takes upon himself the trusteeship of anything, such as to receive the interest upon securities and deal with them as a factor or agent, his legal relation to his customer is simply that of debtor and creditor. When money is paid into the banker's hands it becomes his, and he "is bound to return an equivalent by paying a similar sum to that deposited with him, when he is asked for it." If, however, he is asked to invest money or apply it to some specific purpose, and he undertakes to do so, he assumes a fiduciary character, and comes within the scope of the Trust Acts. Again, "when bankers take a mortgage security from their customers for a fixed sum owing to them by the latter, the relation of banker and customer ceases thenceforth as to that sum, and it cannot be included in the customer's current account so as to entitle the bankers to charge compound interest thereon; and in reference to the sum so secured, the mutual rights and obligations are thenceforth those of mortgagees and mortgagor." *Grant's law of banking.* The state of a customer's account is kept secret by the banker. The latter is bound to obey the orders of the former, if the balance in his hands is sufficient for the purpose, and provided the orders are such as it is the custom to give to bankers. The banker is, moreover, required to "know his customer's handwriting, and also what is not his customer's handwriting." And if he pays a cheque, the drawer's name of which is a forgery, he cannot debit his customer with the amount. But "if the cheque is drawn payable to order and the payee's name is forged, and the banker pays the holder without knowledge of the forgery, the banker is protected and enabled to charge the drawer therewith." *Cheques*, see under this head, *Letters of Credit, etc.*, are issued for the transmission of money by bankers and merchants who engage in the trade of banking. They are chargeable with a stamp duty of one penny when used in the United Kingdom, but if sent by persons in the United Kingdom to correspondents abroad, authorizing them to draw on them, the letters of credit are exempt. "If the letter is stolen," says Grant, "or lost, and the banker upon whom the letter of credit is drawn, honours the drafts or pays the amount upon a forged signature, he is not thereby discharged; neither is the banker granting the letter of credit. But the remedy is against the banker by the person who paid the money to him for the letter of credit." ***Bills of Exchange made payable at bankers'*** are accepted payable either at *a* bank or at *certain* bank, ***there only and not otherwis*** *or elsewhere.* In the first case, the bill can be presented by the holder to the acceptor himself or at the bank stated, provided he does so within bank hours; and in the second case, the bill can only be presented for payment at the place named in the body of the instrument. A banker who gets in the course of business an acceptance payable at his own place of business, does not require to present it to the acceptor; it is enough that he sees whether the acceptor's balance is sufficient to take up the acceptances. When payable at a particular town, it is sufficient if the bill is presented at the banker's of the town. In cases where the acceptor's address appears on the bill, and in addition the names of the bank where payable, the holder must present "at the particular bank mentioned." The banker requires no additional authority but the acceptor's signature to pay the bill at maturity, as it is held that the fact of acceptance is specific authorization. *Bills are paid* to the person who can give the banker a lawful discharge. If the latter have not sufficient funds at the credit of the acceptor's account to pay the bill and advance the sum required, to prove the credit of the accepttor they can recover the advance, provided, of course, they can prove that the signatures of the customer, and the endorsement by the payee are not forgeries. *A bill is considered paid* when the acceptor himself or his agent pays the sum stated in the bill, but his liability is not discharged if the bill is taken up by a stranger for a collateral purpose of his own. *Diligence in noticing a forgery.* If a banker pays a bill on presentment and discovers on the day following that the acceptance is a forgery, he cannot recover the money paid. No opinion has been pronounced as to the time when notices must be given in a case of this kind, but it is obvious that the sooner such notice is given the better. There is a distinction where a banker simply discounts for a third party, which is, that upon finding out the forgery, he can recover from his customer. *Protested bills.* "A customer," says Grant, "upon whom a bill has been drawn payable at his banker's, remits money to them to meet and take up the bill, two days after it became due; the bankers on tendering the money to the holder of the bill, find it has been sent back to the endorser, protested for non-acceptance; they are not liable to the holder, if on having received fresh orders from the customer not to pay the bill, they refuse to do so when it is presented subsequently by the holder." *Appropriation of payment.* A customer who may have several distinct accounts with a banker, and is his debtor, has the right to say how his payment is to be applied, but if he makes a payment generally, the banker "has a right to appropriate it to which account he pleases, and may take reasonable time to determine which." In the case of a bill, money expressly paid to meet it cannot be applied to another purpose, but in the event of the acceptor becoming insolvent, provided that the banker has instructed no one to pay the bill, he can apply the money to the general account. *Effect of the Statute of limitations.* According to Macleod, "the relation between banker and customer being simply that of debtor and creditor, if a customer was to leave a balance in his banker's hands for more than six years without operating on his account, it would appear that the Statute of Limitations would take effect, and he might if he chose refuse to pay it." *Sale of a Bill.* When a bill is discounted it is regarded as a complete sale of the debt. The amount is passed to the credit of the customer, and he is charged with the sum agreed upon for discounting; were nothing more done the customer's liability would cease, but as he is required to endorse the bill, the banker has the right to recover the amount from him should the bill be dishonoured. It is not uncommon, as writers on this subject observe, to regard *discounts* as equivalent to loans, although this is certainly a misconception. The banker buys the bill as he would buy any other kind of property, and does not stand in any fiduciary relation whatever to the person who sold it. *Banker as Agent or Trustee* enters into fiduciary relations with his customer, and in case of a violation of good faith is liable to be dealt with under the Criminal Acts. The fiduciary relation is this:—When a banker undertakes the charge of specie, plate, and securities of all kinds, and enters into an arrangement to recover and deal with the properties as his customer directs, he becomes a trustee or bailee, and if he in any wise converts "to his own use or benefit, such money, security, proceeds, or any part thereof," he shall be liable to be transported. "And if any chattel or valuable security or any power of attorney, for the sale or transfer of any share or interest in any public stock or fund, whether of this kingdom, or of Great Britain, or of Ireland, or any foreign State, or in any fund of any body, corporate company or society, shall be entrusted to any banker, merchant, broker, attorney, or other agent for safe custody or for any special purpose without any authority to sell, negotiate, transfer, or pledge, and he shall in violation of good faith, and contrary to the object and purpose for which such chattel, security, or power of attorney shall have been entrusted to him, sell, negotiate, transfer, or pledge, or in any manner convert to his own use or benefit, such chattel or security, or the proceeds of the same, or any part thereof, or the share or interest in the stock or fund to which such power of attorney shall relate, or any part thereof, he "shall be dealt with as committing a misdemeanour." In the event, however, of the banker making an advance on securities and by that means acquiring a lien thereon, he is entitled to satisfy his claims by selling the sureties or effects, if the pawner does not otherwise repay the advance. As agent a banker receives the bills of his customer for collection, but he acquires no property in them, and when his bills are paid he is bound to credit his customer's account with the amount. In case of a bankrupt, the bills and funds are held by the banker in trust for the creditors. *Bills of Lading and Dock Warrants* are instruments which when endorsed enable the banker to obtain the possession of the goods they represent. *Bankruptcy of a Customer.* When an act of bankruptcy is commited, whether the banker has notice or not of it, provided that he knows that the act has been committed, he must hold any money or property belonging to the bankrupt's estate in his hands for the creditors. But he can retain "any security he actually holds for any debt to which it is specially appropriated, but he is the trustee of the creditors for any excess." *Change of Firm.* The out-going partners are liable to a customer for the amount due to him at the time of their retirement, and the incoming partners are liable only for debt incurred since they joined the firm. *Acceptances per procuration* indicate that the authority of the agent is limited, and accordingly "a banker who discounts a bill (thus accepted) cannot maintain an action against the principal if the agent has exceeded his authority." It is necessary before a banker takes a bill accepted or endorsed "per pro," to satisfy himself that the person so signing is duly authorized by examining the power of attorney conveying the authority, which is usually sent to the bank for that purpose. *Discounts* are the bills presented to a banker for sale. By giving the following extracts from Mr. Gilbart's work on banking, the various classes, &c., of bills, will be better understood than were we to enumerate them ourselves. "The bills may be generally divided into the following classes:—1. Bills drawn by producers or manufacturers upon wholesale dealers. 2. Bills drawn by wholesale dealers upon retail dealers. 3. Bills drawn by retail dealers upon consumers. 4. Bills not arising out of trade but yet drawn against value, as rents, &c. 5. Kites or accommodation bills. The first two classes of bills are the best, and are fair legitimate bills for bankers to discount. The third class ought not to be too much encouraged. They are for comparatively small amounts, and are drawn by shopkeepers and tradesmen upon their customers. To discount these bills freely would encourage extravagance in the acceptors, and ultimately prove injurious to the drawers. When a man accepts bills to his butcher, baker, tailor, or upholsterer, he may be fairly suspected of living beyond his income. Solvent and regular people pay their tradesmen's accounts with ready money. The fourth class of bills, though sometimes proper, ought not to be too much encouraged. Persons out of trade have no business with bills. The last class should always be rejected. By an experienced banker who knows the parties the discovery of accommodation bills is by no means difficult. They are usually drawn for even amounts for the largest sum that the stamp will bear, and for the longest term that the bank will discount, and are presented for discount soon after they are drawn. The parties are often relations, friends, or parties who from their avocations can have no dealings with each other." To this we may add that it is by no means certain that shrewd dealers who fly "kites" will expose themselves to detection by neglecting to give their bills an appearance of reality. Were a banker to require documentary evidence of some kind that a bill is drawn against value, he would be less liable to err. A dealer would hesitate before signing a statement that his bill had been drawn against goods specified, if that were not the case; while on the other hand he would be glad of the opportunity of showing the banker that he was doing a *bonâ fide* business. "The length," says Mr. Gilbart, "of the period which bills have to run is also matter of consideration. The principal advantages to a bank of short dated bills, compared with long dated bills, are the following:—There is more safety in discounting short bills, because the parties may fail before the long ones fall due. The commission (where this is charged) will be more in the course of a year upon any given amount of capital employed in discounting short bills than in discounting long bills; long dated bills lock up the funds of the bank, so that they cannot be discounted with safety but from the bank's own capital; for if a bank employs its own deposits in its circulation in discounting long dated bills, and payment of the notes or deposits shall be demanded, the long dated bills could not be rediscounted, and the bank must stop. Long bills may encourage speculation, as persons may purchase large quantities of commodities in the expectation that the price will advance before the long bills which are accepted in payment shall fall due; while, if the bills are of short date, this will be prevented."

Banks (Loan), which are sometimes called *Montes Pietatis*, were originally established in the fifteenth century for the purpose of affording poor persons the means of obtaining small advances of money on their goods gratuitously. At the beginning no interest was charged, as the funds of the banks were kept up by charitable subscriptions, but when these began to fail, it was found necessary to charge a small per-centage for the money lent. In 1464 one of these institutions was founded at Perugia, another in Rome in 1539, both of which did much to check the extortions of the usurers of those times. But the Naples loan bank, established in 1540, was considered the most successful. In 1777 the Mont de Pieté was established at Paris, and about the same time an institution of a similar kind at Petersburg. The business done is that of a pawnbroker or loan society.

Banks for Savings were first established in this country early in the present century, but the original undertaking was on so limited a scale that but a few country parishes profited. The idea, however, was afterwards taken up in Scotland, which resulted in the formation of the Edingburgh Savings' Bank, an institution that excited much interest on account of the beneficial character of its operations. Others were founded in the large towns and commercial centres of the kingdom, and, in course of time, their responsibility grew so great that it was found advisable to pass at various times parliamentary measures for the purpose of regulating and encouraging these institutions. But the most important addition that was made to this kind of banking was the establishment of the Government Savings' Bank in connection with Post Office business. While the older institutions were regarded with considerable favour, there existed always a feeling of uncertainty as regards their solvency, and many prudent working families preferred to keep their savings idle rather than incur the risk of loss. All objections have been met by the national undertaking, a vast amount of money was poured into its treasury, and year after year its business has gone on increasing. On making a first deposit in the Government Savings' Bank, every person must give his Christian and surname, and state his occupation and residence, and must sign a declaration, to be witnessed by the Postmaster, or by some person known to the Postmaster, or by the Minister or a Churchwarden of the parish in which the depositor dwells, or by a Justice of the Peace; and if such declaration, or any part thereof, shall not be true, the depositor making the same will forfeit all right to his deposits.

A copy of the declaration can be had at any Post Office. Deposits of one shilling or of any number of shillings, or of pounds and shillings, may be made by any person at the Post Office Savings' Bank, provided that such depositor shall not make deposits amounting to more than £30 in any year ending the 31st December, or make any further deposit when the amount standing in his name exceeds £150, exclusive of interest. When any depositor's principal and interest amount together to £200, all interest will cease so long as the balance of the account continues to amount to the said sum of £200.

Interest calculated yearly at the rate of £2 10s. per cent. per annum will be allowed on every complete pound deposited, reckoned from the first day of the calendar month next following the day on which a complete pound shall have been deposited or completed, up to the first day of the calendar month in which the monies are withdrawn. The interest thus calculated will be at the rate of one halfpenny per calendar month for every complete pound. The interest will be reckoned to the 31st December in every year, and will then be added to the principal.

Besides ordinary persons, deposits may be made:—

By a trustee on behalf of another person, in the joint names of such trustee and the person on whose account such money shall be so deposited; but repayment of the same, or any part thereof, will not be made without the receipts of both parties.

By or for the benefit of any person under 21 years of age; and repayment will be made to such minor if more than 7 years old, as if he were of full age.

By the trustees of any legally established Friendly, Charitable, or Provident Society, or Penny Savings' Bank, provided such trustees make application by post to the Controller of the Savings Bank Department, accompanied by a copy of their rules. Such Societies, &c., are allowed to invest considerably beyond the usual limit, or without restriction as to amount, according to circumstances.

In the name of the Registrar of any County Court. Under the 24th section of the Act 30 and 31 Vic. c. 142 (County Courts Act), "trust moneys" not in excess of £500 may be thus deposited; and under the 26th section, money paid into a County Court in "equitable proceedings" may be deposited by the Registrar without restriction as to amount.

Bankok, cap. of Siam, and the seat of government since the disturbance of Yuthia in 1766. It is situated on both sides of the Menam. *Lat.* 13° 40′ N. *Lon.* 101° 10′ E. *Pop.* about 60,000. *Exports.* The export of rice is set down at about 130,000 tons. The increased demand in China has led to an extension in the cultivation, and will doubtless lead to more. The price at which it sells is ruled entirely by the demand in China; and the growers, who usually bring their own produce to market, realised large profits during the last few years. The average price is about 300 per cent. higher than it was before the Treaty of 1855. The land on which the seed is sown belongs to the King, and the rent-charge is £2 10s. per acre. In good seasons the return from the seed is ninety-fold. There is no system of irrigation, the natives trusting entirely to the rains or the overflowing of the rivers for the necessary moisture. Manure is not used, and the fields are seldom left fallow. The ground is, therefore, not so productive as it could be made, nor is new land brought into cultivation at the rate which might be expected. Only one crop is sown in the year. *Teak.* The Government have now withdrawn all obstacles placed in the way of foreigners who wished to engage in the inland teak trade. They have also allowed foreigners to rent and work the jungles in which the teak trees grow. Bankok possesses some considerable advantages over Maulmain as regards the facility with which the timber can be brought down to it, and in Bankok the trees are both abundant and of a larger size. Their transport, however, is a matter of great difficulty. At present the sole means used for dragging timber in the forests is by elephants. In order to work a single jungle properly an outlay of about £4000 would be requisite for the purchase of elephants, hire of labour, &c. Those who have not so large a capital at their disposal, must enter into contracts with the chiefs of the different districts, who, having much manual and elephant labour at their disposal, are willing to bring the logs to the water.

and hand them over to the purchaser, at the rates agreed on. In Siam proper the jungles are under the superintendence of the governors of the districts; in the Laos provinces they are the private property of the chiefs, of whom there are five or six in each province. There are numerous other descriptions of wood in Siam applicable to ship-building, but, with the exception of "Mai-takien," the prices are as high as that given for teak; and the great ease with which the latter is worked, together with its well-known character for durability, will always give it the preference. The "Mai-takien" can be had in lengths up to 40 feet. It is a very durable wood, particularly under water, is easily worked, and its elasticity is such that 2-inch planks can be fastened on the timbers of vessels without the necessity of steaming it. It is to be had in great abundance along the coast. *Sugar.* For many years past the production of sugar has been gradually decreasing in Siam. The heavy taxation to which, in all stages of its production, this article is subjected, is undoubtedly the main cause of its decrease. But were the native manufacturers placed on a liberal footing, there is no valid reason why Siam should not take high rank among the sugar-producing countries of the world. The cane is that known as the Sangalore cane. *Cotton.* The cultivation of the plant itself, and the means employed in picking and cleansing the cotton, are of the rudest description. A patch of jungle is cleared, generally a new one every year, whereby much good timber is destroyed. The ground is lightly hoed, and the seed sown broadcast at the time the rain is expected. Nothing further seems to be done until the plant has grown up. *Imports* consist principally of Manchester cotton manufactures and twist. Iron wares and shipping stores are also imported, and a great variety of articles from China, such as earthenware, spelter, tea, dried fruits, silk, &c. The total value of this branch of the trade amounts to upwards of one million sterling, and the total value of the exports to about one-third more. *Shipping.* The principal qualities looked for are a good carrying capacity with a light draught. The British tonnage cleared at this port was as follows:—1862, 26,817 tons; 1863, 28,603 tons; 1864, 54,771 tons. There has been a considerable augmentation of Hanseatic vessels employed lately here. *Port Dues and Duties.* The port dues were abolished in 1855. The duties on imports were fixed at 3 per cent. *Money, Weights, and Measures.* The currency consists of cowrie shells and silver. "200 bia or cowries make 1 p'hai-nung; 2 p'hai-nung 1 sing-p'hais 1 fuang; 2 fuangs, 1 salung; 4 salungs, 1 bat or tical; 80 ticals, 1 cattie; 100 catties, 1 picul. The standard coin is the bat = 2*s.* 6*d.* The Siamese cattie = 2⅔ lb. avoirs. In long measures, 12 finger-breadths make one span; 2 spans 1 cubit; 4 cubits 1 fathom; 1 fathom 6 feet 6 inches."—(*Macculloch.*)

Bankrupt. A bankrupt formerly was, in the eye of the law, a trader who secreted himself, or did certain other acts tending to elude or defraud his creditors. The word, in this sense, is derived from *bancus* or *banque*, the table or counter of a tradesman, and *ruptus*, broken; denoting thereby that one whole shop or place of trade is broken or gone; though others chose the word *route*, a trace or track; bankrupt, said they, being one who has removed his banque, leaving but a trace behind. But as the word is understood now, a bankrupt is a person who is unable to meet his engagements with his creditors, and either for his own protection, or in their interest, commits an act of bankruptcy. By this act he commits commercial suicide, and all his property at once passes from him, and is dealt with as belonging to his creditors. The bankrupt law is a system of positive regulations by Act, 1869, 32 and 33 Vict., chap. 71, which was passed to amend and consolidate the former law. By it, no person, not being a trader, shall be adjudged a bankrupt in respect of a debt contracted before the date of the passing of the Bankruptcy Act of 1861. *Description of traders.* Alum makers, apothecaries, auctioneers, bankers, bleachers, brokers, brickmakers, builders, calenderers, capenters, carriers, cattle or sheep salesmen, coach proprietors, cowkeepers, dyers, fullers, keepers of inns, taverns, hotels, or coffee-houses, lime burners, livery stable keepers, market-gardeners, millers, packers, printers, share-brokers, shipowners, shipwrights, stock-brokers, stock-jobbers, victuallers, warehousemen, wharfingers, persons using the trade or profession of a scrivener, receiving other men's moneys or estates into their trust or custody, persons insuring ships, or their freight, or other matters, against perils of the sea, persons using the trade of merchandize by way of bargaining, exchange, bartering, commission, consignment, or otherwise, in gross or retail, and persons who, either for themselves, or as agents or factors for others, seek their living by buying and selling, or buying and letting for hire, goods or commodities, or by the workmanship or the conversion of goods or commodities. But a farmer, grazier, common labourer, or workman for hire, shall not, nor shall a member of any partnership, association, or company, which cannot be adjudged bankrupt under this Act, be deemed as such a trader for the purpose of this Act. *Definitions.* "Property" shall mean and include money, goods, things in action, land, and every description of property, whether real or personal; also obligations, easements, and every description of estate, interest and profit, present or future, vested or contingent, arising out of, or incident to, property as above defined. "*Person*" shall include a body corporate. *Application of the Act.* It shall not, except in so far as is expressly provided, apply to Scotland or Ireland. A partnership, association, or company, corporate, or registered under "The Companies' Act, 1862," shall not be adjudged bankrupt under this Act. *Who may present a petition to the Court.* A single creditor, or two or more creditors, if the debt due to such single creditor, or the aggregate amount of debts due to such several creditors, from any debtor, amount to a sum of not less than fifty pounds, may present a petition to the Court, praying that the debtor may be adjudged a bankrupt, and alleging as the ground for such adjudication any one or more of the following acts or defaults. *Acts of bankruptcy.* (1) That the debtor has, in England or elsewhere, made a conveyance or assignment of his property to a trustee or trustees for the benefit of his creditors generally. (2) That the debtor has, in England or elsewhere, made a fraudulent conveyance, delivery, gift, or transfer of his property, or of any part thereof. (3) That the debtor has, with intent to defeat or delay his creditors, done any of the following things, namely, departed out of England, or being out of England, remained out of England; or being a trader, departed from his dwelling house, or otherwise absented himself; or begun to keep house; or supposed himself to be outlawed. (4) That the debtor has filed, in the prescribed manner, in the Court a declaration admitting his inability to pay his debts. (5) That execution issued against the debtor on any legal process for the purpose of obtaining payment of not less than fifty pounds has, in the case of a trader been levied by seizure and sale of his goods. (6) That the creditor presenting the petition has served, in the prescribed manner, on the debtor a debtor's summons, requiring the debtor to pay a sum due, of an amount of not less than fifty pounds, and the debtor, being a trader, has, for the space of seven days, or, not being a trader, has, for the space of three weeks succeeding the service of such summons, neglected to pay such sum, or to secure or compound for the same. *Adjudication.* No person shall be adjudged a bankrupt on any of the above grounds unless the act of bankruptcy on which the adjudication is grounded has occurred within six months before the presentation of the petition for adjudication; moreover, the debt of the petitioning creditor must be a liquidated sum, due at law or in equity, and must not be a secured debt, unless the petitioner state in his petition that he will be ready to give up such security for the benefit of the creditors in the event of the debtor being adjudicated a bankrupt, or unless the petitioner is willing to give an estimate of the value of his security, in which latter case he may be admitted as a petitioning creditor to the extent of the balance of the debt due to him, after deducting the value so estimated, but he shall, on an application being made by the trustee within the prescribed time after the date of adjudication, give up his security to such trustee for the benefit of the creditors, upon payment of such estimated value. *Proceedings in relation to a debtor's summons.* A debtor's summons may be granted on a creditor proving that a debt sufficient to support the petition is due to him from the person against whom the summons is sought, and that the creditor has failed to obtain payment of his debt after using reasonable efforts to do so. Any debtor served with a summons may apply to the Court to dismiss such summons on the ground that he is not indebted to the creditor serving the summons, or that he is not indebted to such amount as will justify such creditor in presenting a bankruptcy petition against him. *Proceedings on petition.* At the hearing the Court shall require proof of the debt of the petitioning creditor, and of the trading, if necessary, and of the act of bankruptcy, or if more than one act of bankruptcy is alleged in the petition, of some one of the alleged acts of bankruptcy, and if satisfied with such proof, shall adjudge the debtor to be a bankrupt. *Definition of commencement of bankruptcy.* The bankruptcy shall be deemed to have relation back to, and to commence at, the time of the act of bankruptcy being completed, on which the order is made, adjudging him to be a bankrupt. *Creditors bound by bankruptcy proceedings.* Where a debtor shall be adjudicated a bankrupt, no creditor to whom the bankrupt is indebted in respect of any debt provable in the bankruptcy shall have any remedy against the property or person of the bankrupt in respect of such debt. *Appointment of trustee.* At the general meeting of creditors they shall resolve by resolution to appoint some fit person, whether a creditor or not, to fill the office of trustee of the property of the bankrupt, at such remuneration as they may, from time to time, determine. They shall also declare what security is to be given, and to whom, by the person so appointed. They shall, moreover, appoint some other fit persons, not exceeding five in number, and being creditors, to form a committee of inspection, for the purpose of superintending the administration by the trustee of the bankrupt's property. *Description of bankrupt's property divisible amongst creditors.* The property shall not comprise the following particulars: (1) Property held by the bankrupt on trust for any other person. (2) The tools (if any) of his trade, and the necessary wearing apparel and bedding of himself, his wife, and children, to a value inclusive of tools and apparel and bedding not exceeding twenty pounds in the whole. But the property divisible shall comprise the following particulars: All such property as may belong to, or be vested in, the bankrupt at the commencement of the bankruptcy, or may be acquired by, or devolve on, him during its continuance. All goods and chattels being at the commencement of the bankruptcy in the possession, order, or disposition of the bankrupt, being a trader, by the consent and permission of the true owner, of which goods and chattels the bankrupt is the disputed owner, or of which he has taken upon himself the sale or disposition as owner. *First meeting of creditors.* A person shall not be entitled to vote unless at, or previously to, the meeting he has proved a debt provable under the bankruptcy, to be due to him. A creditor shall not vote in respect of any unliquidated debt or contingent debt, or any debt the value of which is not ascertained. A secured creditor shall mean any creditor holding any mortgage, charge, or lien on the bankrupt's estate, or any part thereof, as security for a debt due to him. He shall be deemed to be a creditor only in respect of the balance (if any) due to him after deducting the value of his security. A special resolution shall be decided by a majority in number and three-fourths in value of the creditors present, personally or by proxy, at the meeting. *Conduct of bankrupt.* He shall produce a statement of his affairs at the first meeting of creditors, and shall, to the utmost of his power, aid in the realisation of his property and the distribution of the proceeds amongst his creditors. He shall give an inventory of his goods, a list of his creditors and debtors, and of the debts due to and from them respectively, and submit to an examination in respect of his property or his creditors. He shall attend such meetings of his creditors, wait at such times on the trustee, execute such powers of attorney, conveyances, deeds, and instruments, and generally do all such acts and things in relation to his property as may be reasonably required by the trustee. If he wilfully fail to perform the duties imposed on him, or if he fail to deliver up possession to the trustee of any part of his property which is divisible amongst his creditors, he shall be guilty of a contempt of Court, and may be punished accordingly. *Power of trustee to deal with property.* He shall have power (1) To receive and decide upon proof of debts. (2) To carry on the business of the bankrupt, as far as may be necessary for the beneficial winding up of the same. (3) To bring or defend any action, suit, or other legal proceedings relating to the property of the bankrupt. (4) To deal with any property in which the bankrupt is beneficially entitled as tenant in tail in the same manner as the bankrupt might have dealt with the same. (5) To execute all powers of attorney, deeds, and other instruments expedient or necessary for the purpose of carrying into effect the provisions of this Act. (6) To sell all the property of the bankrupt (including the good-will of the business if any) and the book debts due (or growing due, to the bankrupt) by public auction or private contract, with power, if he thinks fit, to transfer the whole to any person or company, or to sell the same in parcels. (7) To give receipt for any money received by him, which receipt shall effectually discharge the person paying such moneys from all responsibility in respect of the application thereof. (8) To prove, rank, claim, and draw a dividend in the matter of the bankruptcy or sequestration of any debtor of the bankrupt. He may also appoint the bankrupt himself to superintend the management of the property, and, with the sanction of the committee of inspection, the trustee may mortgage or pledge any part of the property of the bankrupt for the purpose of raising money for the payment of his debts. He may refer any dispute to arbitration, compromise all debts, claims, and liabilities, and divide, in its existing form, any property, according to its estimated value, which, from its peculiar nature, or other special circumstances, cannot advantageously be realised by sale. *Trustee to pay moneys into bank.* He shall pay all sums from time to time received by him into such bank as the majority of the creditors in number and value, at any general meeting, shall appoint, and, failing such appointment, into the Bank of England; and if he at any time keep in his hands any sum exceeding fifty pounds, for more than ten days, he shall be subject to the following liabilities: (1) He shall pay interest at the rate of twenty pounds per centum per annum on the excess of such sum above fifty pounds as he may retain in his hands. (2) Unless he can prove, to the satisfaction of the Court, that his reason for retaining the money was sufficient, he shall, on the application of any creditor, be dismissed from his office, and shall have no claim for remuneration, and be liable to any expenses to which the creditors may be put by, or in consequence of, his dismissal. *Preferential debts of the bankrupt.* The following debts shall be paid in full, unless the property of the bankrupt is insufficient to meet them, in which case they shall abate in equal proportions between themselves. (1) All parochial, or other local rates, due from him at the date of the order of adjudication, and having become due and payable within 12 months next before such time, all assessed taxes, land tax, and property or income tax assessed on him up to the fifth day of April next before the date of the order of adjudication, and not exceeding in the whole one year's assessment. (2) All wages or salary of any clerk or servant in the employment of the bankrupt at the date of the order of adjudication, not exceeding four months' wages or salary, and not exceeding fifty pounds; all wages of any labourer or workman in the employment of the bankrupt at the date of the order of adjudication, and not exceeding two months' wages. *In case of apprenticeship.* When at the time of the presentation of the petition for adjudication, any person is apprenticed or is an articled clerk to the bankrupt, the order of adjudication shall, if either the bankrupt, or apprentice, or clerk give notice in writing to the trustee to that effect, be a complete discharge of the indenture of apprenticeship or articles of agreement; and if any money has been paid by or on behalf of such apprentice or clerk to the bankrupt as a fee, the trustee may, on the application of the apprentice or clerk, or of some person on his behalf, pay such sum as such trustee, subject to an appeal to the Court, thinks reasonable, out of the bankrupt's property, to or for the use of the apprentice or clerk, regard being had to the amount paid him, or on his behalf, and to the time during which he served with the bankrupt under the indenture or articles before the commencement of the bankruptcy, and to the other circumstances of the case. *Allowance to bankrupt* may be made with the consent of the creditors.

Landlord may distrain for rent, but the distress shall be available only for one year's rent accrued due prior to the date of the order of adjudication; but he may prove under the bankruptcy for the overplus due, for which the distress may not have been available. *Dividends.* The trustee shall, from time to time, declare a dividend amongst the creditors, and in the event of his not declaring a dividend for the space of six months, he shall summon a meeting of the creditors, and explain to them his reasons for not declaring the same. When all the property has been converted into money he shall declare a final dividend, and give notice of the time at which it will be distributed. *Bankrupt entitled to surplus.* The bankrupt shall be entitled to any surplus remaining after payment of his creditors, and of the costs, charges, and expenses of the bankruptcy. *Discharge of bankrupt.* When a bankruptcy is closed, the bankrupt may apply for an order of discharge; but such discharge shall not be granted unless it is proved to the Court that one of the following conditions has been fulfilled, that is to say, either that a dividend of not less than ten shillings in the pound has been paid out of his property, and might have been paid, except through the negligence or fraud of the trustee, or that a special resolution of his creditors has been passed, to the effect that his bankruptcy, or failure to pay ten shillings in the pound has, in their opinion, arisen from circumstances for which the bankrupt cannot justly be held responsible, and that they desire that an order of discharge in the circumstances following shall be granted to him; and the Court may suspend, for such time as it deems to be just, or withhold altogether, the order of discharge in the circumstances following; namely, if it appears to the Court, on the representation of the creditors, made by special resolution, that the bankrupt has made default in giving up to his creditors the property which he is required by this Act to give up; or that a prosecution has been commenced against him relating to the punishment of fraudulent debtors *Order of discharge* releases the bankrupt of all debts provable under the bankruptcy, with the exception of debts due to the Crown, and debts with which the bankrupt stands charged at the suit of the Crown. *Status of undischarged bankrupt.* Where the bankrupt has not obtained his discharge (1) No portion of a debt provable under the bankruptcy shall be enforced against the property of the person so made bankrupt until the expiration of three years from the close of the bankruptcy; and during that time, if he pay to his creditors such additional sum as will, with the dividend paid out of his property during the bankruptcy, make up ten shillings in the pound, he shall be entitled to an order of discharge. (2) At the expiration of a period of three years from the close of the bankruptcy, if the debtor made bankrupt has not obtained an order of discharge, any balance remaining unpaid in respect of any debt proved in such bankruptcy shall be deemed to be a subsisting debt of the nature of a judgment debt, and, subject to the rights of any persons who have become creditors of the debtor since the close of his bankruptcy, may be enforced against any property of the debtor.

BAQUAIS or VAÇOA. The name given in Mauritius to a species of Pandanus, the screw pines. It grows to the height of 30 feet when left unpruned. The leaves are out every second year, beginning when the plant is three years old, and each plant yields enough for two large bags. The leaves are then split into fillets, which are from three-fourths to one inch broad at the base, but taper to a point, and are from three to four feet in length. From these good sacking is made.

BARBADOES, eastward of St. Vincent, and lying out considerably to westward, is the advanced post of the lesser Antilles in the West Indies. The island is low along the shore, except on the E., but as it is generally free from marshy ground, it enjoys a more salubrious climate than any of the other islands of the group to which it belongs. It has no mountains of any great elevation, the loftiest being Mount Hillaby, which is only 1145 feet above the level of the sea. The houses of the planters are very numerous all along the coast, and these, with the surrounding vegetation and swelling uplands, form a delightful scene. Bridgetown, the capital, is in *lat.* 13° 12′ N.; *long.* 59° 45′ W. *Pop.* 161,594. *Extent.* About 21 miles in length and 14 in breadth. *Area.* 166 sq. miles, or 106,470 acres of land. *Revenue and expenditure.* The former in 1870 was £96,372, and the latter in the same year was £97,149. The financial accounts of the four years ending 1870 exhibit satisfactory results; first, stability in the revenues, notwithstanding two successive unfavourable seasons; and, second, equalization of revenue with expenditure, notwithstanding advances made for public works. *Produce.* The prosperity of the island depends mainly upon the sugar crop, and the crop depends upon the rainfall. The crop of 1869 was the smallest that had been taken off since the years 1847–49, when the system of planting was very much inferior, and the use of artificial manures had scarcely been introduced. The yield of 1869 was only 32,150 hogsheads, being 28 per cent. below the average. In 1859 the deficiency was not so great, only 11 per cent.; in 1864 it was 19 per cent. The yield of 1870 was 39,360 hogsheads, which was 12 per cent. below the average, corresponding closely with that of 1857, which was 14 per cent. below it. *Trade and shipping.* It is customary to measure the crop of the year by the quantity of sugar exported. But what is called the "offal crop," consisting of molasses and rum, must be taken into consideration. In the above four years the values of the quantities of that crop exported, independent of the consumption in the island, which is by no means inconsiderable, especially of rum, which is not usually exported, amounted to a large percentage upon the value of the sugar crop, viz :—

VALUE OF EXPORTS OF

	Sugar.	Molasses.	Rum.	Proportion of Molasses and Rum to Sugar.
	£	£	£	£
In 1867....	800,970	112,027	1,522	14
" 1868....	857,250	137,450	885	16
" 1869....	479,550	160,569	1,244	33
" 1870....	591,990	98,406	4,063	17
Average..	682,440	127,113	1,978	19

Besides sugar, molasses, and rum, the exports of colonial produce are insignificant. In 1869 and 1870, they averaged £7,284, the principal articles being empty packages and lime. The remainder consisted of the biscuit trade. The direction of the trade may be seen by the following figures for 1870. United Kingdom imports, £413,908, exports, £544,456. British Colonies imports, £151,252, exports, £295,031. Foreign Countries imports, £504,706, exports, £133,533. One-half of the imports from the British Colonies consists of lumber, staves, and fish. Two thirds of the imports from foreign countries consists of provisions, lumber, &c.; the other third consists chiefly of guano from Peru and mules from Saminca. Of the exports to foreign countries, five-sixths were shipped to the United States, the rest chiefly to foreign West Indies. The destination of the sugar and molasses during 1869–1870 has been:—

	1869.	1870.
	£	£
To United Kingdom	424,769	525,840
" United States	134,724	97,791
" British North America	76,944	64,293
" Other Countries	3,881	2,626

Shipping. There is but one port of entry, Bridgetown, in Carlisle Bay. Of vessels entered in 1870 there were—

	No.	Tonnage.	Average Size.
British	1,025	97,442	95 tons.
Foreign........	236	41,093	174 "
Total........	1,261	138,535	269 tons.

Of the total number, 121 of 14,674 tons were in ballast. The majority of the latter were chiefly from the West Indies. *Lloyd's agent and also bankers,* Michael Cavan and Co.; correspondents, Herries, Farquhar, and Co., 16, St. James's Street, S.W.

BARCALAO, a Spanish word for the fish we call cod, similar to that of Newfoundland.

BARCELONA, the capital and largest city of Catalonia, is situated in *lat.* 41° 22′ 58″ N.; *long.* 2° 8′ 11″ E. *Pop.* about 250,000. The harbour of this port is formed by a mole running out to a considerable distance in a southerly direction, at the extremity of which is the lighthouse. Among the chief articles of manufacture and export are silk, linen, cotton, lace, wool, glass, leather, iron, copper, hardware of all sorts, cutlery, firearms, besides wines, brandies, &c. During the last fifteen years, the manufactures of silk and cotton have been carried on with remarkable enterprise, owing to the increased means of communication between Barcelona and the important towns of the Peninsula. The principal articles of import are raw cotton, coffee, sugar, and various other colonial products; the French and Italian manufactures, besides grain, rice, Baltic timber, yellow wax from Barbary, Swedish iron, steel from Stiria, hemp from Riga, and great quantities of fish from Newfoundland. The raw cotton and machinery imported from the United Kingdom are of great value, Catalonia being the principal seat of the Spanish cotton trade. The annual value of imports and exports is about fourteen millions sterling, and the tonnage cleared for sea with cargoes amounts to about 200,000 tons. *Port dues.* British vessels pay 1 real (2½*d.*) per ton anchorage, 1 real per ton lighthouse; and navigation dues amount to one-eighth of a real per Spanish cwt. of cargo discharged or loaded. *Merchant's commission.* On goods shipped a commission of 2½ per cent. is charged, and on consignments 2 per cent. *Money, weights, and measures.* "Accounts are kept in libras of 20 guildos, 240 dineros, or 480 mallas. The libra is likewise divided into reales de plata Catalan of 3 sueldos each, and into reales ardites of 2 sueldos each. Hence 6·7 of the former or 10 of the latter = 1 libra Catalan = 2*s.* 4*d.* sterling. The peso duro, or hard dollar, is valued at 37½ sueldos Catalan, eight such dollars making 15 libras. The quintal is divided into 4 arrobas, or 104 lb. of 12 *oz.* to the lb. The pound = 6,174 Eng. grains = 8325·6 as of Holland. 100 lb. of Barcelona = 88·215 lb. avoir. The yard, named cana, is divided into 8 palmos of 4 quartos, and is = 21 inches, very nearly. Hence 100 canas = 53,499 metres = 77·5 yards of Amsterdam = 58·514 English yards. The quartero, or measure for grain, is divided into 12 cortanes or arrobas, 24 cortarines, and 72 mitadellos. It is = 32·7 English wine gallons. 4 curgas = 1 pipe. The pipe of Majorca oil contains 107 cortanes."—*Macculloch.*

BARCONE, a short and broad vessel used in the Mediterranean for the carriage of corn, salt, and other provisions along the coast.

BARIGA, a kind of raw silk brought from the East Indies.

BARILE, a liquid measure of Italy and Sicily, the contents of which vary from about 7 to 28 imp. gallons, according to the town or district.

BARILLA [Fr. *Soude,* Ger. *Soda Barilla,* Sp. *Barilla,* It. *Barriglia,* Port. *Soda Barrilha,* Du. *Soda*]. An impure carbonate of soda, obtained by lixivating the ashes of seaweeds. The best quality is of a bluish grey colour, and the commoner kinds of a colour approaching to black. It is used in the manufacture of soap, glass, and by bleachers, &c. In Europe, says O'Shaughnessy, the salt is prepared either by burning seaweeds and lixivating the ashes, the product being termed kelp and barilla, or by decomposing common salt by sulphuric acid and then roasting the resulting sulphate with chalk, sawdust, and fragments of iron. The mass when washed gives the carbonate of soda. The celebrated Natron Lake of Loonar, observes Dr. Smith, produces *six* principal varieties of salt, to which the natives give the following names :—1 Dulla, 2 Numuck, 3 Khuppul, 4 Pappree, 5 Khoosku, 6 Mahd Khar. Dulla and Numuck *Dulla* are used for dyeing silks, fixing colours, also as medicine, and in the manufacture of bangles ; of *Khuppul* there are two kinds, one of greater value than the other ; this salt is used in fixing the red dyes of cloth. Pappree is used in the manufacture of bangles, of which there are two manufactories near the lake. When these are in full operation, bangles are manufactured in large quantities, each man being able to manufacture from 600 to 700 daily. The purest salt is found close to the saline springs, and the other salts in their order as entered above are found on receding from that point towards the margin of the lake.

Barley [Ger. *Gerste*, Fr. *Orge*, It. *Orzo*, Sp. *Cebada*], a well-known bread corn, cultivated extensively in Essex, Norfolk, and Suffolk, and more or less all over Europe. The chief kinds are the long-eared barley, the winter or square barley, and the sprat or battledore barley. They are distinguished from the number of grain in the ears, or from the time of sowing them. In April barley is commonly sown in this country, and in the proportion of nearly three bushels of seed to the acre. The yield depends greatly on the season, soil, and culture, but the average may be stated at 36 bushels per acre. It is used principally by maltsters, but it makes excellent white bread, particularly if mixed with some corn-flour. In 1869 the acreage under barley in the United Kingdom was 2,483,277, and in 1870, 2,623,752. The figures for the divisions being as follows : England in 1869, 1,864,088 acres ; 1870, 1,963,744. Wales, 1869, 137,382 ; in 1870, 163,853. Scotland, 1869, 229,810 ; in 1870, 244,142. Ireland in 1869, 223,338 ; in 1870, 243,435. Isle of Man in 1869, 7,692 ; in 1870, 7,856. Channel Islands in 1869, 767 ; in 1870, 722 acres.

Barleycorn, the least of our long measures, being the third of an inch.

Barnacles are a kind of shell-fish that fasten on the bottoms of ships, and often damage the sheathing so much as to give it the appearance of a honeycomb.

Barra, a long measure used in Spain and Portugal to measure woollen cloths, linens, serges, &c. It is one-eighth less than the English yard.

Barratry, from the Italian *barratrare*, signifies to cheat. In navigation it means fraud practised by the master or crew of a vessel, by which the owners are injured. In policies it includes every kind of cheating, wilful deviation from the course laid down by the owners, desertion, sinking the ship, embezzlement of cargo, smuggling, or any of the numerous offences that may be committed by fraudulent or knavish persons on board a vessel. "However, to constitute an act of barratry, there must be *fraud*; it must arise *ex maleficio*. A simple deviation through ignorance, unaccompanied with fraud or crime, will not be barratry. From the definition of barratry, as given above, it follows that it can be committed by no one but the master and mariners, and against no one but the *owners* of the ship, a term which, however, comprehends owners *pro hâc vice*—c. 9, *General freighters*. Of course, when the owner of a ship is also master, he cannot commit barratry against himself, nor can an act performed with his consent be barratrous against him ; but a part owner, who is also master, may be guilty of barratry. Barratry may be committed against the freighter, though with the consent of the general owner, and it seems doubtful whether it may not against the owners, though with the consent of the freighter. And although an act cannot be barratrous against the owner if it be done with his consent, yet an act done for his benefit, if without his consent, may. Thus, where the master, having general instructions to make the best purchases with despatch, went to an enemy's port and traded there, for which his ship was seized. This was held to be barratry, although his only object was to do the best for his employer ; for it is not for him to judge in cases not entrusted to his discretion, or to suppose that he is not breaking the trust reposed in him, but acting meritoriously, when he endeavours to advance the interest of his owners by means which the law forbids, and which his owners must be taken also to have forbidden."—*Smith's Mercantile Law*.

Barrel, a cask or vessel for holding liquids, &c. The English barrel, wine measure, contains the eighth part of a tun, the fourth of a pipe, and one-half of a hogshead ; that is to say, it contains 31½ gallons. A barrel, beer measure, contains 36 gallons. The barrel of beer, vinegar, or liquor preparing for vinegar, ought to contain 34 gallons ; barrel of flour, 196 lbs. In Ireland the barrel of barley bere and rapeseed equals 20 stones each of 14 lbs. ; a barrel of Essex butter, 106 lbs. ; of Suffolk, 256 lbs ; barrel of English barley bere and rapeseed, 16 stones ; oats, 14 stones ; malt, 12 stones ; barrel of herring, about 1,000 herrings.

Barrel-bulk, a measure of capacity = 5 cubic feet, 8 of which = 1 ton measurement.

Barrique, a liquid measure of France, but which varies in different places. In Rouen = 43 imp. gallons ; Rochelle, 38½ ; Nantes, 35½ ; Bordeaux, 50½ imp. gallons.

Bartang, a palm which grows on the hills of China, Malacca, and Penang. The leaves are used in mat-making, for the sides of houses, and also for thatching.

Bartung, seed of a bush, a native of Persia, used in the manufacture of sherbet. It is astringent and cooling.

Baru, *Malay* [Kawal, *Javanese*], is a gossamer-like substance, found at the base of the petioles of the Gomuti palm. It is imported into China, where it is applied, like oakum, for caulking, and also for tinder.

Baruth, an Indian measure, containing 17 gantans, which are equal to about 54 to 56 lbs. avoirdupois.

Barutine Silks are of Persian make. They are weighed by the damasquin = 4 lbs. avoirdupois.

Basaltes, a kind of stone of a very fine texture, of a deep glossy black, resembling that of polished steel, and mixed with no other colour, nor any extraneous matter of any kind. The most remarkable quality of this stone is its figure, being never found in strata, but standing up in the form of regular angular columns, composed of a number of joints, one placed on and nearly fitted to another, as if formed by the hands of a skilful workman. It is remarkably hard and heavy, will not strike fire with steel, and is a fine touchstone. The basaltes were originally found in columns in Ethiopia, in fragments in the river Tmolus, and some other places. We now have them frequently in columns and small pieces in Spain, Russia, Poland, near Dresden, and in Silesia; but the noblest store in the world seems to be that called the Giant's Causeway, in the north of Ireland, where it rises far up in the country, runs into the sea, crosses its bottom, and rises again on the opposite land. The constituent parts of this mineral are:—

Silex	44
Alumina	16
Oxyde of iron	16
Lime	9
Water..	5
Soda	4
Muriatic acid	1
	95

Basella Alba, *Malabar Nightshade, or Indian Tea* [Arab, *Badroojee Abbeez*]. The natives of the Coromandel coast reckon five varieties of this, three of which are cultivated and two wild—the Yerra or Poha-batsalla, the Mattoo batsalla, and the Pedda batsalla. But Roxburgh was inclined to regard them all, as ourselves, of one species. Mason says:—"This is a twining plant with succulent stems and leaves, which the natives of India and Burmah cultivate for spinage, which belongs to the same natural family." The leaves of the white plant have a pleasant aromatic taste and an agreeable smell. An infusion of them is used as tea by both Europeans and natives in India.

Basket, as a measure, denotes an uncertain quantity, as a basket of medlars is two bushels, of asafœtida from 20 to 50 pounds weight, &c.

Baskets [Ger. *Körbe*, Du. *Korven*, Da. *Kurve*, Sw. *Korgar*, Fr. *Corbeilles*, It. *Panieri Cesti*, Sp. *Canastas*, *Canastos*, *Cestas*, *Cestos*, Port. *Canastras*, *Cestas*, Rus. *Korsinii*], are made of rushes, splinters, or willows, which last, according to their manner of growth, are called osiers and sallows. They thrive best in moist places, and the proprietors of marsh lands generally let what they call willow beds to persons who cut them at certain seasons and prepare them for basket-makers. To form an osier bed, the land should be divided into plots, 6, 8, or 10 feet broad, by narrow ditches, and if there is a power of keeping water in these cuts at pleasure, by means of a sluice, it is highly advantageous in many seasons. Osiers planted in small spots and along hedges will supply a farmer with hurdle stuff, as well as with a profusion of all kinds of baskets. The common osier is cut at three years, but that with yellow bark is permitted to remain a year longer. When the osiers are cut down, those that are intended for white work, such as baskets used in washing, are to be stripped of their bark or rinds while green. This is done by means of a sharp instrument fixed into a firm block; the osiers are passed over this and stripped of their covering. They are then dried and put in bundles for sale.

Bason [Ger. *Becken*, Du. *Bekken*, Da. *Bekkener*, Sw. *Bäcken*, Fr. *Bassin*, It. *Bacini*, Sp and Port. *Bacias*, Rus. *Tasu*, Pol. *Miednice*], a term used by glass grinders for a dish of copper, iron, &c., in which they grind convex glasses, as concave ones are formed on spheres, and by hatters for a round iron mould, in which they form the matter of their hats, and also for a leaden one for the brims of hats, having an aperture in the middle, of a diameter sufficient for the largest block to go through.

Batavia, the capital of the Dutch possessions in the East Indies, occupies the site of the Javanese city of Sunda Calappo, the chief place in the obsolete kingdom of Iocastra. It is on the east coast of the Island of Java, and is situated upon a beautiful bay, broad, deep, and dotted with low green uninhabited islets, among which vessels of large burthen can anchor in safety. The lighthouse, which can be seen 13 miles distant, is in *Lat*. 106° 47′ 40″ E., *Long*. 6° 5′ 4″ S. The site of the city appears to have been chosen from the facility it afforded for inland navigation, and that this was taken advantage of may be inferred when the city has now a navigable river running a couple of miles inland, from which a number of canals branch off, affording great conveniences for the carriage of goods. But although the low nature of the ground was advantageous in this respect, the pestilential effluvia arising from the canals rendered the place very unhealthy, and determined the government to build a new town on the heights of Weltevreden. There the European merchants have settled, and only visit the old town when business requires. *Pop.* It is estimated that there are about 3,000 Europeans, 85,000 natives, 23,000 Chinese, 1,000 Arabs, and 10,000 negroes. *Commerce.* Batavia is the centre of Dutch East Indian commerce, and although it has been deprived of much of its former splendour, it continues in the possession of an important and increasing trade with Europe, India, China, and America. Coffee is the staple export, but tobacco, rice, and sugar are cultivated extensively. *Imports.* Earthenware and porcelain, glassware, cotton and woollen manufactures, Manchester printed calicoes, gunny sacks, silk, raw and manufactured, and a great variety of fancy goods. *Exports.* Indigo, coffee, hides, birds' nests, sugar, tobacco, tin, &c. The total value of the merchandise and specie imported and exported at this port is considerable, but we have no means of estimating the amount, as the official figures include the whole shipping trade of Java and Madura, which are thus summarized :—

IMPORTS.

Years.		M'chandise	Specie.	Total
1865	Guld.	40,247,188	5,519,200	45,766,388
	£	3,353,932	459,933	3,813,866
1866	Guld.	53,761,553	2,621,617	56,383,170
	£	4,480,129	218,468	4,698,597
1867	Guld.	51,715,265	2,139,391	53,854,656
	£	4,309,605	178,282	4,487,887

EXPORTS.

Years.		M'chandise	Specie.	Total.
1865	Guld	52,632,128	9,823,040	62,455,168
	£	4,386,011	818,587	5,204,597
1866	Guld.	59,454,766	16,174,271	75,629,037
	£	4,954,564	1,347,850	6,302,480
1867	Guld	59,313,449	6,031,415	65,344,864
	£	4,942,787	502,618	5,445,405

Money. The gulden = 1*s.* 8*d.*; the sovereign = 12 florins; Spanish doubloon current = 38 florins 40 cents. *Weights and Measures.* The picul = 136 lbs. avoir.; legger = 133⅓ imp. gallons; pound = 1·2 lbs. avoir.; koyang = about 60 imp. bushels; thail or tail = 593 grains, or 1⅓ lb. troy; bahe = 81⅔ lbs. avoir. *British Consul,* James McLachan, Esq. *Lloyd's Agents,* Messrs. Maclaine, Watson, and Co.

BAVARIA, the most important of the German States, next to Prussia and Austria. *Pop.* 4,824,421. *Area* 29,288 Eng. sq. miles. It is subdivided into eight provinces. *Cap.* Munich. *Pop.* 170,688. It is composed of two separate territories, the larger being bounded E. and S. by Austrian dominions, W. by Wurtemburg and Baden, and N. by several small German States. The smaller is named Rhenish Bavaria, or the Palatinate, and is situated on the west of the Rhine, bounded N. by Rhenish Prussia and Hesse-Darmstadt, E. by Baden, S. by France, and W. by Rhenish Prussia and Hesse Homburg. Bavaria is essentially an agricultural country; its soil is fertile, and great attention is given to the cultivation of wheat, rye, barley, and oats. Flax, hemp, and various fruits are also grown extensively. The forests are large, and composed principally of pine and fir trees. *Minerals.* The chief are iron and coal, as may be seen from the following statement of the productions in the years 1864 and 1867:—

VALUE OF PRODUCE AT PLACE OF PRODUCTION.

Mines.	1864.	1867.
	Florins.	Florins.
Gold (Wash Gold)	559	892
Gold and Silver Ore........	—	—
Iron ,, ...	254,933	282,930
Lead ,, ...	39,699	—
Quicksilver ,, ...	4,653	—
Copper ,, common	—	—
,, mixed with Silver..	6,251	—
Antimony	—	—
Lead, Stone, and Pyrites .	21,276	6,264
Ochre and Coloured Earth	12,795	10,395
Coal and Peat	1,306,767	1,662,164
Graphite	40,000	18,910
Porcelain Earth	15,740	12,379
Emery	631	1,280
Clay	41,027	1,340
Soap Stone	2,385	6,258
Gypsum	40,400	5,600
Slate	16,840	14,928
Fluor Spar, &c.	3,213	850
Total	1,807,171	2,023,130

Manufacturing Industry is spread over a number of small producers, except in the province of Swabia, where cotton-spinning and weaving industry is carried on on a highly important scale. In the other provinces the principal manufactures are coarse linens and woollens, hose, hardware, glassware, and a variety of fancy articles. *Bavarian Swabia* may, then, be regarded as the chief commercial province. At the close of 1869 there were 418,486 spindles, 3,785 power looms, and 9,939 workpeople in this province at work in cotton spinning and weaving. The capital involved amounted to £1,542,000, and the value of the goods manufactured was nearly £2,000,000. The number of hands employed in the spinning mills was, on an average, at the rate of one person to every eighty spindles; and that in the weaving mills about seven persons to every power loom. The general character of the raw materials employed and of the goods produced is a medium quality, as it appears the manufacture of the finer descriptions of yarn is comparatively unprofitable. Germany itself—especially Wurtemburg, Baden, and some districts of the former Northern Confederation—constitute the chief markets for that portion of the yarns produced in Bavarian Swabia which is not appropriated to the supply of the local weaving mills. In latter times only small quantities of the coarser numbers of yarn have found their way from Bavaria into the Austrian States. Upper Italy takes an inconsiderable quantity also of the coarser kinds. As regards the finer descriptions of yarn produced in and about Augsburg, as well as in other parts of Bavaria, their sale at remunerative prices, even in the several States of the Zollverein, into which they are admitted free of all duty, is described as becoming year by year more precarious, as the duty of two Prussian dollars (6*s.* sterling) per 100 Zoll. lbs. weight (110¼ lbs. avoir.) levied on the importation into the Zollverein States from abroad of yarns of No. 25 and upwards, is found altogether inadequate protection to the Bavarian against the foreign manufacturer. *The manufactures produced* by the looms of Swabia are chiefly of smooth-faced unbleached cotton cloths, destined either for subsequent printing or for use as linings, &c., but some of the Augsburg weaving establishments also manufacture wove pattern fancy or coloured cotton goods for dresses, bed coverlets, and other similar purposes. The chief markets for the cotton cloths intended for subsequent printing, as well as the bleached cloths, are the towns of Northern Germany, and especially Berlin, to which latter place some manufacturers send their goods exclusively. A small quantity goes to Switzerland and to Bohemia, and of the coloured or fancy pattern cloths some portion finds a market in North America. But, generally speaking, the cotton manufactures of Bavarian Swabia may be said to have no regular or extensive market beyond the precincts of the German Customs House. Hand-loom weaving, which not many years ago was carried on in different districts of Swabia, has declined much in the same proportion as weaving by machinery has increased in the towns. A considerable quantity of carded cotton wool for wadding, made either from cotton waste or from cotton rags and cuttings, is produced here. A considerable portion of this wool is sent into the Austrian States, whence it finds its way to Turkey: Switzerland takes a portion, and the Zollverein States absorb the rest. The manufacture of cotton twist employs from 350 to 400 persons. In 1869 there were 14,000 *spindles at work* at this manufacture, and the estimated value on the spot of the twist produced was about £62,500 sterling. *Sewing cotton.* All descriptions are manufactured, both white and coloured, and the several operations of bleaching and dyeing, as well as that of making the cardboard winders or the wooden reels on which the sewing cotton is sold, are generally performed in the same establishment as that in which the cotton itself is manufactured. *Spinning of flax, hemp, and tow into* yarn or string, for the purpose of weaving, rope-making, &c., employs about 10,954 ordinary spindles, 2,124 thread spindles, and 1,281 workmen. This branch came into existence within the last ten or twelve years. The operation of spinning is performed partly on account of the owners of the mills, and partly for third parties, at a fixed rate of remuneration. *Woollen manufactures.* The manufactories of wove woollen goods are chiefly at Augsburg, Nordlingen, Memmingen, and Kaufbeuren. The total number of looms at work in them is about 160, the chief articles produced being blankets, horse-cloths, ordinary flannel, and the coarser description of cloth made use of by the rural population for their dress. There is also at Nordlingen one manufactory of a common kind of carpets, which produces annually about 100,000 florins' worth of goods. *Printing of cotton and woollen cloths* forms an important feature in the industry of Augsburg; and the printed goods sent from Augsburg are well-known, not only in the markets of the Zollverein States, but in those of Austria and Italy. *Bleaching, dyeing, and dressing industries.* There are 25 establishments, great and small, for the bleaching, dyeing, and dressing of cotton textures, the total quantity of goods turned out by them in the course of the year being reckoned at about 330,000 pieces. Of these goods a considerable proportion is sent in the rough state to this Province from neighbouring countries (principally from the Austrian Province of the Vorarlberg) to be dyed and prepared for the market. After having gone through this process, the goods so sent are forwarded for the most part to Vienna for account of the original producers. The other goods prepared in these establishments find their way into all the States of the Zollverein, and are especially in request in the Berlin market. *Silk weaving* has been gradually given up, and the mills in which it was conducted have been turned to other purposes. The manufacture of machines and machinery, of brass, steel, and cast iron, and of metal wares generally, has increased very considerably in and about Augsburg in latter times; for not only have all the more important establishments which were already in existence eight or ten years ago been considerably enlarged, but several new manufactories have, in the meantime, been set up, and the number of work-people employed in the whole Province of Swabia in regularly organised manufactories of this description (as distinguished from ordinary workshops and small establishments employing only a few hands) is estimated at about 2000. But the aggregate number of persons engaged, whether in small shops or large manufactories, in the working of metal generally, is set down at between 8000 and 9000. The metal wares of this province, and especially machines and machinery, are exported in considerable quantities to Austria, Switzerland, Italy, Russia, and Sweden. *Various industries.* In addition to the more important and characteristic branches, the manufacture of a variety of different commodities is carried on in the principal towns of the province on a more or less extensive scale, such, for instance, as chemicals, artificial manure, lucifer matches, paper and paper-hangings, leather of all kinds, and parchment, soap and candles, whalebone and horn wares, gold-leaf and gilt and silver paper, gunpowder, &c. *Production of butter and cheese* is carried on successfully, and on a very extensive scale, in the southern and more mountainous division of this province, known as the Allgau, the chief towns of which are Kemplen, Kaupbeuren, and Immenstadt. The cheese produced is of three different descriptions, known respectively as Limburg, Swiss, and Emmenthal, all of which resemble, more or less, in their general character the cheese made in Switzerland. These cheeses find a market all over Germany, especially in the north. *Money.* The florin; average rate of exchange, 1s. 8d. The centner=110¼ lbs. avoirs.

BAY SALT [Ger. *Baysalz, Seesalz*, Du. *Zeezout.* Da. *Soesalt.* Sw. *Bojsalt, Hafs-salt.* Fr. *Sel marin.* It. *Sale marino.* Sp. *Sal marina.* Port. *Sal marinho.* Lat. *Sal marinum*] a salt made from the sea-water. *See* Salt. It is commonly employed in the making up of provisions for exportation.

BAZAR, BAZARI, or BAZAARD, a place designed for trade among the eastern nations, particularly the Persians, some of which are open at the top, like the market-places of Europe; others are covered with high vaulted ceilings, and adorned with domes to give light.

BAZAT, or BAZA, a long, fine-spun cotton, which comes from Jerusalem, whence it is also called Jerusalem cotton.

BAZENDGES, a vegetable substance used by the Turks, and other Eastern nations, in the scarlet dyeing. For this purpose it is mixed with cochineal and tartar, in the proportion of two parts of basendges to one of cochineal.

BDELLIUM, a gum resin, somewhat resembling myrrh in appearance, brought from the Levant. It is met with in single drops of a very irregular size, some of which are as large as a hazel nut. Its colour is dusky, and its taste bitter. It readily burns, giving out smoke and a crackling noise. It is partly soluble in alcohol, and partly in water, or completely in diluted spirit.

BEAD-PROOF. The standard strength among distillers for alcoholic liquors.

BEADS [Ger. *Rosenkranze*, Du. *Paternoster*, Da. *Paternoster baand*, Sw. *Råband*, Fr. *Rosaires*, It. *Corone*, Sp. *Coronas*, Port. *Cersas Rosarios.*] The common glass of which beads are made for necklaces, &c., is coloured with manganese only. Glass beads or bugles are exported in large quantities to Africa, and are given in exchange to the natives for their commodities.

BEAK or BEAK-HEAD of a ship, that part without a ship before the forecastle which is fastened to the stern, and is supported by the main knee.

BEAM; BEAMS [Ger. and Du. *Balken*, Da. *Bielker*, Sw. *Balkar, Bielker*, Fr. *Poutres, Solives*, It. *Travi*, Sp. *Vigas*, Port. *Traves, Vigas*, Rus. *Brewna*, Pol. *Belky*]. The largest piece of wood in a building, which lies across the walls, and serves to support the principal rafters of the roof, and into which the feet of these rafters are framed. No building has less than two of these beams, viz., one at each end; into these the girders of the garret roof are also framed: and if the building be of timber, the teazle tenons of the posts are framed into them. The *Beams of a ship* are the great main cross-timbers which hold the sides of the ship from falling together, and which also support the decks and orlops. The main beam is next the main mast, and from it the others are reckoned by first, second, third beam, &c. The greatest beam is called the midship beam. *Beam-compass*, an instrument consisting of a square wooden or brass beam, having sliding sockets, that carry steel or pencil points: they are used for describing large circles where the common compasses are useless. *Beam of an anchor*, the largest part of it, called also the shank. *Beam* also denotes the lath or iron of a pair of scales; sometimes the whole apparatus for weighing goods is so called. *Beam of a plough*, that in which all parts of the plough-tail are fixed. It is commonly made of ash, and is eight feet long, but in the four-coultered plough it is ten feet long. *Beam* or *Roller* among weavers, a long and thick wooden cylinder, placed lengthwise on the back part of the loom of those who work with a shuttle. That cylinder on which the stuff is rolled as it is weaved is also called the beam or roller, and is placed on the forepart of the loom.

BEANS [Ger. *Bohnen*, Du. *Boonen*, Da. *Bønner*, Sw. *Bönor*, Fr. *Feves*, It. *Fave*, Sp. *Habas*, Port. *Favas*, Rus. *Bobü*, Lat. *Faba*], a pulse of the largest sort commonly cultivated in the fields. Beans grow admirably in Egypt, where there are large fields entirely covered with them; the blossoms of which are much more odoriferous than those of Europe. There are 25 species of beans seven of which are natives of Britain.

BEARER *of a Bill* is the person in whose hands the bill is, and in favour of whom the last order or endorsement is made. Cheques or drafts on a bank or bankers are frequently made payable to *bearer*, but bills of exchange never.

BEAVERTEEN, a kind of fustian, made of coarse twilled cotton cloth.

BECERRILLO, BECERRO. The names given in Spain to a calfskin tanned and dressed.

BEDFORD, an inland county of England, bounded on the N. and N.W. by Northamptonshire, on the E. by the counties of Huntingdon, Cambridge, and Hertford, and on the W. by the counties of Buckingham and Northampton. *Pop.* 146,256; area, [illegible] *occupiers of land*, 3,752. Average extent held by each, 68 acres. Average under crop of all kinds bare fallow and grass, 255,174. *Under corn crops*, wheat 52,813 acres, barley or bere 30,691, oats 10,846, rye 568, beans, 18,940, peas 6,901, total 120,159; *grass crops*, potatoes 4,778 acres, turnips and swedes 13,013, mangold 4,001, carrots 612, cabbage kohl-rabi, and rape 4,966, vetches, lucerne, and other green crops 6,063, total 32,433. Flax, 149, bare fallow, and uncropped arable land 9,512, clover, sanfoin, and grasses in rotation, 19,773, permanent pasture meadow and grass not broken up, 72,148 acres *Live Stock*, horses 10,368, cattle 28,238, sheep 182,042, pigs 24,950. *Minerals*, limestone, coarse marble, and inferior coal. *Manuf.* Straw plaiting and thread lacework, in which three-fourths of the female population are engaged.

BEZOAR, *Oriental*, a moderately hard and heavy stone, very variable and uncertain in size, shape, and colour. It is generally of a round form, and its size is between that of a horse-bean and that of a small walnut, though there are some larger, and others smaller than peas. The ordinary colour is a duskish olive or greenish brown. It is always smooth and glossy on the surface, and, when broken, is found to consist of a great number of coats or crusts of stony matter, laid one over the other; and often formed upon a piece of stick, or seed of a fruit, or some such article, for a nucleus or basis. This is a drug of very great price, and of very great fame; but it is not of the number of those things that have been proved to deserve the repute they stand in. It is brought to us from Persia, and many parts of the East Indies; it is to be chosen entire, not in scraps or fragments, of a greenish or olive colour, with some mixture of grey in it, and such as, when rubbed on paper, before whitened with ceruse, gives a yellowish colour. There is also an occidental bezoar, which comes from Mexico. Bezoars are generally supposed to be concretions formed in the stomach or intestines of different graminivorous animals: but it is not completely ascertained in what animal they are found, or how many species may yield them. Dr. Pearson analysed one specimen, and found it entirely composed of vegetable matter. Several writers attribute very great virtues to the Oriental Bezoar; but it is probable that if it has any action at all, it is merely that of an absorbent earth, as chalk or magnesia.

BEECH OIL, an oil drawn by expression from the *mast* of the beech tree after it has been shelled and pounded. This oil is very common in some parts of France.

BEER [Fr. *Bière*, Ger. *Bier*, Welsh *Bîr*], liquor made of malt and hops. It may be made from any farinaceous grain, though it is produced most generally from barley. It is, properly speaking, the wine of barley. The meal of the grain being extracted by a sufficient quantity of water, and remaining at rest in a degree of heat requisite for the spirituous fermentation, naturally undergoes this fermentation, and is changed into a vinous liquor. But as all these matters render the water mucilaginous, fermentation proceeds slowly and imperfectly in such liquor. The kinds of beer in general use have a variety of names, viz., ale, porter, strong beer, table, and small beer. The ales most esteemed are Scotch and Burton brews. Burton is a pale, strong, *sweet* ale, and the Scotch is also pale, but comparatively mild, and carries with it very little taste of the hop. It is made principally at Alloa, Edinburgh, and Preston-pans; the former in Staffordshire chiefly, but large quantities are produced at Nottingham and Birmingham. *Porter* is a beer of a brown colour, brewed in a higher temperature than ale, but in other respects the process is the same. *Mild beer* is new beer, and *entire* old, or that which is made expressly for keeping. *Brown stout* is a fine, strong beer made principally at London and Dublin. *Small and table beer* are weak liquors, made from the malt after other ales have been drawn off. The privilege of manufacturing beer is granted on payment of a duty to the Excise, the amount of which is regulated according to the quantity used in brewing, and a licence for selling beer is obtained on payment of £1 1s. if off the premises, and £3 3s. if on the premises.

BEES-WAX [Ger. *Wachs*, Du. *Wasch*, Da. *Vox*, Fr. *Cire*] is a solid substance obtained from the honeycomb after the honey has been drawn. The best kind has an agreeable smell, and is of a bright yellowish colour. It is soluble neither in spirit of wine nor in water; boiled in the first, it loses its yellow colour, becomes white, and of a softer consistence; but treated in the same manner with the latter, undergoes no change; distilled in close vessels, it totally arises, and set on fire in the open air, entirely burns away, leaving no ashes behind.—*Lewis.*

BEFFTA, calico in Arabic.

BEGGUD, the Indian name for tin-foil.

BEIGE, a French course cloth.

BELAY, on board ship, is to makes fast the ropes in their proper places.

BELELAIS, a species of silk resembling taffetas, made in India: the piece contains 20 yards.

BELGIUM, *Kingdom of*. One of the least of the European States. It is situated between France and Holland, and is about one-eighth the size of Great Britain. *Provinces*. Antwerp, Brabant, East and West Flanders, Hainault, Liege, Limburg, Luxemburg, Namur. *Area* 11,412 square miles. *Principal towns and populations*, Brussels (cap.) 163,434, Ghent 116,607, Antwerp 123,971, Liege 101,699, Bruges 47,204, Malines 35,529, Tournay 31,525, Louvain 32,976, Verviers 32,375, Mons 23,121, Namur 22,579, Courtrai 23,276, St. Nicolas, 23,366. *Total population*, 4,839,094. *Aspect of the country*. The north and west provinces are flat and fertile, and intersected by canals. They so far resemble Holland as to be taken for a continuation of that country. The south and east provinces are more irregular, being mountainous, with here and there tracts of marsh land and extensive forests. *Forests.* One-fifth of the whole surface of the kingdom is wooded. Oak, pine, poplar, fir, larch, beech, maple, and all the common trees of Europe, are found in abundance. *Working Mines.* The productions chiefly are coal, iron ore (washed pyrites), blende, calamine, galena, lead ore. Coal is the mineral of the highest importance in this kingdom. The Hainault group of collieries are the most productive, the yield annually being larger than the whole produce of France. The following table gives the number, productions, and distributions of the Belgian coal mines in 1867.

Province.	Number of Coal Mines.		Total.	Number of Shafts in Work.	Amount of Coal obtained.	Value. Francs.
	In Work.	Unworked.				
Hainault......	86	44	130	208	9,595,280 tons.	123,619,100
Liege	67	49	116	93	2,770,956 „	31,308,763
Namur.........	22	17	39	31	389,586 „	3,325,030
	175	110	285	332	12,755,822	158,252,893

The production of the two previous years was:—Hainault, 1865, tons, 920,6058; 1866, 9,851,424. Namur, 1865, tons, 305,734; 1866, 358,687. Liege, 1865, tons, 2,328,911; 1866, 2,564,551. Total in 1865, tons, 11,840,703; 1866, tons, 12,774,662. The three coal producing districts of the province are Mons, Charleroi, and The Centre The latter furnishes the coal most used for domestic purposes. Of Belgian coal, France is the principal consumer, the quantity annually sent there amounting to about four million tons. The iron mines are principally between the Sambre and the Meuse; the quality of the metal is like that of France, but it sells at less price. Hainault and Liege supply a fair quality of copper, and Namur, Luxemburg, and Liege, lead. Towards Brussels, the Scheldt forms a vast basin filled with limestone, and containing anthracites, sandstone, and carbonized earth. Near Namur and Mons excellent stone for road-making is found, and also a great variety of useful marble. *Agriculture.* The soil, particularly in Flanders, Brabant, and Hainault, is fertile and highly cultivated. The agriculture of Belgium has been celebrated for more than 600 years, and the skill, industry, system of manuring, and disuse of fallows, have been frequently noticed favourably. The most important materials of wealth are corn, flax, hemp, and timber. The average produce of the soil is wheat, 18·48 hectolitres per hectare. Rye 19·88, barley 29·79, oats, 39·55, potatoes 1·720 kilos per hectare, flax 493 kilos per hectare. *Animals.* The horses, of which there are a variety of breed, are chiefly used for agricultural purposes. The black cattle are highly esteemed as of approved breeds, fed upon the richest pastures as well as upon turnips and clover. Sheep farming is not regarded as highly profitable; the two indigenous breeds are the Flemish and the Ardenne, the wool of which is of an inferior quality. The pigs are tall and thin, and are converted into very good pork and bacon, but the prices are high compared with the figures of other markets. TRADE AND INDUSTRY. The staple article of exports from Belgium to the United Kingdom is silk manufactures, next woollen and worsted yarn for weaving, and last agricultural produce. Belgian imports from the United Kingdom mainly cotton and woollen goods. The preparation of *flax* is an important industry in this country, and the system pursued has led to the most favourable results. It is this: Flax is either steeped in meadows, in stagnant or in running water. The two latter methods are preferred, for as the fibre prepared in meadows is apt to become discoloured or spotted through the action of the soil, the former system is little practised, save in districts where water is scare. Steeping in stagnant water makes the fibre softer and more flexible, in running water stronger and of a better colour. Flax fibre, however, that has been steeped in streams, if kept in store for a year before being worked, acquires the same flexibility as that steeped in stagnant water. Steeping in running water is, therefore, considered in Belgium as the best mode of preparation. At the beginning of the century, flax occupied in the kingdom at least one-third more space than all the other so-called industrial plants united; since then, and especially since 1840, the extent of land devoted to this culture has sensibly diminished. Two varieties are generally grown. The "Vulgar" flax, bearing a blue flower, and that which has an ordinary white flower. The last-mentioned, which is grown in the Pays de Waes, gives a coarse but abundant and hardy filament, almost exclusively employed for mixing with hemp. The American white flowered flax has been tried in different districts with various results. The blue flowered flax is less hardy, but yields a finer and softer filament. Three sorts of seeds are employed in Belgium, those of Riga, Zealand, and that of the country called "Après-tonne." The cultivation of flax and hemp occupies in the two *Flanders* a part of Brabant and Hainault, from 30,000 to 40,000 hectares of excellent land. This has to be carefully tilled and manured, in order to produce 20,000,000 kilogrammes of what is called "linteille" (peeled flax), representing in value at least 36,000,000 francs. As a raw farm produce, it yields 120,000,000 kilogrammes of green flax, requiring great care in cultivation. On an average the exports amount to 18,000,000 kilogrammes of vegetable fibres, valued at about 22,000,000 francs. In Flanders there were lately 220,551 female hand-spinners, 57,148 weavers, and 60,000 souls employed in cleansing, preparing, bleaching yarns, &c. The entire extent of land under cultivation amounts to 1,830,516 hectares, and of these 32,836 being given up to flax; this crop constitutes 1·79 per cent. of the whole. Among the most important of the manufactures are woollen cloths at Verviers, Liege, and Dolhaim; carpets at Tournay, linens at Ghent, St. Nicolas, Termonde, Courtray, &c. Great advances have been made in cotton manufactures; the invested capital in this industry amounting to about 80,000,000 francs. The chief seats are Ghent, St. Nicolas, Antwerp, and Mechlin. At Antwerp, Sienc, and Uccle, are the principal silk industries. Brussels and St. Nicolas are justly celebrated for their lace, and Antwerp, Tournay, and Ypres for ribands. The centre of the hosiery manufacture is Tournay, where usually 3,000 looms are kept actively employed. *Trade and Commerce* of Belgium are of all kinds, and extend to nearly all the foreign markets of the world. France heads the list of importing countries in the special commerce of Belgium, followed in order of importance by Great Britain, the Netherlands, Germany, Russia, and the United States. In the export market of Belgium, France likewise takes the first place, followed by Great Britain, the Netherlands, and Germany. The commercial transactions between Belgium and France are altogether of nearly twice the amount in value of those between Belgium and the United Kingdom.

TOTAL REAL VALUE OF MERCHANDIZE IMPORTED FROM AND EXPORTED IN TRANSIT THROUGH BELGIUM IN EACH OF THE YEARS 1866, 1867, 1868.

Yrs.	Imported for Transit.				Exported in Transit.			
	Direct.	From Bonding Warehouses.	Total.		By Sea.	By Land and River.	Total.	
	Fr	Fr	Fr.	£	Fr.	Fr.	Fr.	£
1866	657,934,743	22,308,117	680,242,860	27,209,713	200,075,333	480,167,527	680,242,860	27,209,713
1867	670,631,821	29,805,281	700,437,102	28,017,484	185,472,595	514,964,507	700,437,102	28,017,484
1868	717,199,056	35,974,657	753,173,711	30,126,948	181,935,725	571,237,090	753,273,731	30,126,948

VALUE OF SPECIE AND BULLION IMPORTED INTO AND EXPORTED FROM BELGIUM FROM AND TO PRINCIPAL COUNTRIES IN EACH OF THE YEARS 1866, 1807, 1868.

Years.	Principal Countries whence Imported and to which Exported	Imported.	Exported.
	Francs ..	75,140,110	28,907,290
	£	3,005,604	1,159,892
1866	Great Britain	59,986,370	85,000
	Holland......	1,664,530	6,748,520
	France	12,948 330	—
	Zollverein ..	540,881	22,163,770
	Francs ..	43,046,670	15,514,360
	£	1,721,866	620,574
1867	Great Britain	33,839,990	12,800
	Holland	2,835,300	8,966,860
	France.......	5,100,450	2,257,900
	Zollverein....	1,157,730	4,276,800
	Francs ..	27,731,950	7,597,160
	£	1,109,278	303,886
1868	Great Britain	21,001,900	153,000
	Holland......	2,673,260	2,437,430
	France	3,117,390	4,960,200
	Zollverein....	1,868,100	6,800

THE COMMERCIAL INTERCOURSE OF BELGIUM WITH GREAT BRITAIN IS THUS SHOWN SINCE 1863.

Years.	Exports from Belgium to Great Britain.	Imports of British Home Produce into Belgium.
1863..	£4,876,212	£1,828,622
1864..	5,174,221	2,107,332
1865..	7,379,893	2,921,300
1866..	7,906,849	2,861,386
1807..	7,555,202	2,816,481
1868..	8,255,043	3,150,105
1869..	9,391,403	4,003,535
1870..	11,247,864	4,481,079

The internal trade is greatly assisted by means of the rivers and canals of the kingdom, and also by the State railway, which is one of the principal sources of national revenue. Belgium is the first State in Europe in which a general system of railway has been planned and executed by the Government at the public cost. The external trade is conducted mainly through Antwerp and Ostend, where there are bonding yards, and also at Bruges, Brussels, Courtray, Ghent, Liege, Louvain, Mechlin, Nieuport, Tournay, &c. Communication with the sea is maintained by means of the canal of Bruges to Oostburg by the canal of Dunkirk to Furnes by the canal of Ghent to Terneuzen, by the canal of Termondt to Hulst, by the Scheldt from Flessingue to Antwerp, by the Scheldt and the canal of Willebroek from Brussels to Antwerp, and by the canal of Louvain and the Scheldt from Louvain to Antwerp. *Shipping.* The number and tonnage of vessels which belong to Belgium in 1868 were as follows:—61 sailing vessels, 31,198 tons; 21 steam vessels, 8,750 tons. The number and tonnage of Belgian and foreign vessels of various nations entered and cleared at ports in Belgium in 1868, amount to 5,204, aggregating 1,326,775 tons. Of the nationality of foreign vessels, Great Britain takes the lead, France next, and Prussia and Russia follow. *Banks, &c.* The capital of the Bank of Belgium, estab. 1835, is 20,000,000 francs, in 20,000 shares, each of 1,000 francs. There are various financial associations instituted to facilitate commercial investments throughout the kingdom, and numerous societies having for their object the promotion of the interests of the industrial classes.

Money. The 25 franc average rate of exchange to £1 sterling. The Belgic coins are 11 in number, viz., one gold piece of 40 francs, one of 20 francs. In silver, five francs, two francs, one franc, half-franc, quarter franc. Copper, 10 centime, five, two and one. *Weights and Measures.* The kilogramme = 2·20 lbs. avoir.; The tonneau = 2,200 lbs. hectare = 2·47 English acres; hectolitre, dry measure = 2·75 imperial bushel, liquid measure = 22 imperial gallons. Metre = 3·28 feet, metre cube 35·31 feet, kilometre = 1,093 yards. *Old Measures* still in use. Antwerp silk ell = 27·32 imperial inches; woollen ell = 26·97 imperial inches. The Brabant ell = 27·38 imperial inches; the Aam of 50 stoops = 32⅜ imperial gals.; the velte = 4·1 imperial gals.; the last of 37½ viertels = 10¼ imperial quarters; and 100 lbs. Brabant weight = 103·35 lbs. avoir.; Brabant league = 6,076 yards. *Usance of Bills* from London, 1 month's date. No days of grace.

TOTAL LENGTH OF RAILWAYS OPENED IN BELGIUM. COST OF CONSTRUCTION, NUMBER OF PASSENGERS TRAVELLED ON 1st JANUARY, 1866 AND 1869, AND AMOUNT OF RECEIPTS AND EXPENDITURE OF THE RAILWAYS WORKED BY THE STATE.

			1866.	1869
			Kilom.	Kilom
Total Length of Lines worked by the State			749·1	862·6
Total Length of Lines worked by Companies			1,536·2	1,867·8
Total Lines open			2,285·3	2,730·4
English miles			1,419	1,695
Total Cost of Construction of State Line		Francs	237,896,891	264,929,170
		£ Sterling	9,515,876	10,597,166
Total Number of Passengers Travelled on State Lines			10,677,963	12,824,334
Express	1st Class		290,904	361,041
	2nd Class		134,126	305,809
	3rd Class		—	388,772
Ordinary	1st Class		463,780	543,145
	2nd Class		1,299,502	1,532,960
	3rd Class		8,125,388	9,233,906
Military			82,708	68,678
Children, &c.			281,555	290,021
Total Receipts from Passengers and Luggage		Francs	15,710,732	15,879,441
		£ Sterling	620,429	635,177
" " from Merchandise		Francs	20,673,733	23,894,279
		£ Sterling	826,949	955,771
" from Cattle, Horses, and Carriages		Francs	489,982	803,158
		£ Sterling	19,599	32,126
" " Miscellaneous		Francs	1,444,332	1,275,453
		£ Sterling	57,773	51,018
Total from all Sources		Francs	38,318,780	41,852,331
		£ Sterling	1,532,751	1,674,093
Total Working Expenditure		Francs	19,577,554	24,826,964
		£ Sterling	783,102	993,078
Total Net Revenue		Francs	18,741,226	17,025,367
		£ Sterling	749,649	681,014

NUMBER AND TONNAGE OF SHIPPING (SAILING AND STEAM) BELONGING TO THE SEVERAL PARTS OF BELGIUM IN EACH OF THE YEARS 1866, 1867, 1868.

Ports.	1866.		1867.		1868.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
Antwerp	61	29,426	56	29,054	46	[illegible]
Ostend	26	6,542	23	6,065	24	[illegible]
Bruges	4	885	4	885	2	300
Ghent	4	783	4	783	4	783
Brussels	1	116	1	595	1	497
Louvain	1	111	1	111	1	346
Malines, Liege & Nieuport	1	62	1	62	1	62
Total	98	37,925	90	37,555	79	31,893

BELL [Ger. *Glocken*, Du. *Klokken*, Da. *Klokker*, Sw. *Klockor*, Fr. *Cloche*, It. *Campana*, Sp. *Campanas*, Port. *Sinos*, Rus. *Kolokolà*, Pol. *Dzwony*], a well known machine, ranked by musicians among the musical instruments of percussion. The metal of which a bell is made is a composition of tin and copper or pewter and copper: the proportion one to the other is almost 20 pounds of pewter, or 23 pounds of tin to 100 pounds weight of copper.

BELL-METAL [Ger. *Glockengut*, Du. *Klokspys*, Da. *Klokkemalm*, *Klokkenspits*, Sw. *Klokgods*, *Klockmetall*, Fr. *Metal de fonte, ou de cloches*, Sp. & Port. *Campanil*, Rus. *Kolokolnaja mjed*, Pol. *Spiza*, *Spiz*], a composition of tin and copper.

BENDICY, a two-dollar piece current in Morocco.

BENGAL. The chief presidency of British India. It extends between *lat.* 20° and 31° N. and *long.* 74° to 91° E., having N. Bootan, Nepaul, and the Indus; W., the latter, the territories of the Sikhs, and Rajpootana; S., the territory of Berar, the Madras presidency, and Bay of Bengal, and E., the Burmese Dominions. *Area* under British administration, 247,462 square miles; *pop.* 46,638,553. The presidency is divided into the Upper or Western, the Central, and the Lower provinces, the former including Delhi; the Central, Allahabad, Behar, and others; and the Lower provinces, Bengal and the rest still farther E. These provinces are divided into 90 districts. *Principal Cities.* Calcutta (capital of British India), Delhi, Benares, Moorshedabad, Behar, Patna, Allahabad, Agra, and Lahore. *Products.* The principal alimentary Crop is rice, though wheat and cerealia are grown largely in the more elevated and northern parts. In the fertile and irrigated tracts two crops of rice are usually produced from the same ground in one year. Oil-seeds are largely cultivated, the consumption of oil being very great, independent of what is produced for exportation. The principal crops are mustard, til or sesame, and the castor-oil plant. Ginger, turmeric, capsicum, and chillies are largely grown for condiments. The esculent vegetables comprise most of those usual in Europe. The principal commercial crops are cotton, indigo, coffee, safflower, hemp, flax, tobacco, sugar, rice, and the opium poppy. In Assam the genuine tea-plant abounds, and some of its produce has found a ready market in London. *Minerals.* The Himalaya, in Kumaon, is composed of granite, gneiss, porphyry, quartz, mica, &c., and its lower ranges contain sandstone, limestone, copper, and iron ore. The Bhaugulpore district is peculiarly rich in iron. Coal in conjunction with iron is found in considerable quantities in Burdwan and Sylhet. Diamonds are found in Bundlecund, the matrix being a conglomerate bed with quartzose pebbles; silver and gold dust in many rivers. *Factories.* There are upwards of 900 indigo factories in the Presidency. Indigo is cultivated from Dacca to Delhi, and occupies more than one million statute acres; the produce annually is valued at 3 to 4 millions sterling. The cultivation of opium is a government monopoly, and is carried on only in parts of Behar and Benares. The Chinese prefer the opium grown in these parts to that of Malwa. In 1863 the government discontinued the manufacture of salt, and the wants of this province, and, to a certain extent, those of the upper provinces of India are supplied with salt manufactured by private individuals, and imported salt.—(*The Commerce of Bengal is dealt with under the heading* CALCUTTA.)

BEN-NUTS [Ger. *Salbnüsse*, Du. *Behennooten*, Da. *Bennödder*, Sw. *Bennötter*, Fr. *Noix de behen*, It. *Noci di ben*, *Ghiande unguentarie*, Sp. *Nueces unguentarias*, Port. *Nozes unguentarias*. Lat. *Nuces unguentariæ*], the nut of the Ben-tree from which a fragrant oil is extracted, remarkable for its not growing rancid for a number of years. It is the produce of Egypt and Arabia.

BENZOEN OR BENJAMIN, [Ger. *Benzoe*, Du. *Benzoin*, *Benjuin*, Da. and Sw. *Benzoe*, Fr. *Benjoin*, It. *Belzuino*, *elzoino*, Sp. *Benjui* & Port. *Beijoim*, Rus. *Ladon rosnoi*, Pol. and Lat. *Benzoinum*], a dry and solid resin, brought to us, in masses of various sizes, from the East Indies, particularly from the Kingdom of Siam and the islands of Java and Sumatra. It is very brittle, and breaks vitreously. When rubbed it emits a fragrant odour, and when heated sufficiently, lets the benzoic acid escape. It is soluble in alcohol, but insoluble in water It is used chiefly to perfume apartments, and benzoic acid is extracted from it. It has not been examined by any modern chemist. Its specific gravity is 1·092. It is considered as a compound of resin and benzoic acid.

Berasus, a coarse cloth made with cotton thread in Surat.

Bergamo, a coarse tapestry, manufactured with several sorts of spun thread, as flocks of silk, wool, cotton, hemp, ox, cow, or goats' hair. It is properly a weft of all those sorts of thread, the warp of which is commonly of hemp. It is woven on a loom, almost like linen-cloth.

Bergamot, the name of a fragrant essence extracted from a species of citron. As this oil exists pure in the peel, being simply deposited in small cells, the extraction is easy, either by expression or distillation. The former is the best, as the oil is not liable to be altered by heat; but more is produced by distillation than by expression; by this mode two ounces of the oil have been obtained from two pounds of the peel.

Bergolo, a kind of Italian basket.

Bernetta, the name for hat in Arabic.

Berks or *Berkshire*, a county of England bounded N. by the counties of Oxford and Buckingham, E. by Surrey, S. by Hampshire, and W. by Wiltshire. *Pop.* 196,445; *area*, 451,210 stat. acres. *Occupiers of land*, 3,027; average extent held by each, 94 acres; acreage under crop of all kinds, bare, fallow, and grass, 367,982 acres. *Under corn crops.* Wheat, 61,318 acres; barley or bere, 40,303; oats, 26,541; rye, 689; beans, 12,744; peas, 7,095; total, 148,684. *Green crops.* Potatoes, 1,240; turnips and swedes, 39,171; mangold, 4,998, carrots, 185; cabbage, kohl rabi, and rape, 2,271; vetches, lucerne, and other green crops, 11,726; total, 59,593. Flax, 84; hops, 18; bare, fallow, and uncropped arable land, 7,430 acres; clover, sanfoin, and grasses in rotation, 43,555; permanent pasture, meadow and grass, not broken up, 108,618 acres. *Live stock.* Horses, 15,107; cattle, 31,387; sheep, 320,578; pigs, 33,673. *Manufactures.* There is a small production of silk goods and woollens. Sacking and paper are also produced here.

Bersimlichi, the silk which the Greeks use in embroidering.

Berwickshire, a county of Scotland, bounded N. by the county of Haddington, E. by the German Ocean, W. by Edinburghshire, and S. by Roxburghshire and the river Tweed. *Pop.* 36,474. *Area*, 302,951 stat. acres. *Occupiers of land*, 996. Average extent held by each, 189 acres. Average under crop of all kinds, bare, fallow, and grass, 188,440. *Under corn crops.* Wheat, 5,720 acres; barley or bere, 21,048; oats, 34,912; beans, 1,330; rye, 263; peas, 420; total, 63,690 acres. *Green crops.* Potatoes, 3,180; turnips and swedes, 30,292; mangold, 62; carrots, 7; cabbage, kohl rabi, and rape, 348; vetches, lucerne, and other green crops, 850; total, 34,739. Flax, 11 acres; bare, fallow, and uncropped arable land, 1,551. Clover, sanfoin, and grasses in rotation, 55,872; permanent pastures in meadow or grass not broken up in rotation (exclusive of heath or mountain land), 33,474 acres. *Live stock.* Horses, 5,341; cattle, 25,120; sheep, 254,583; pigs, 4,275. *Manuf.* Principally gingham.

Beryl, called by our lapidaries *aquamarina*, is a pellucid gem of a bluish green colour, found in the East Indies and about the gold mines of Peru, and especially in Siberia and Tartary, where its crystals are sometimes a foot long. The beryl, like most other gems, is met with both in the pebble and columnar form, but in the latter most frequently. In the pebble form it appears of a roundish but flatted figure, and commonly full of small flat faces, irregularly disposed. In the columnar or crystalline form, it always consists of hexangular columns, terminated by hexangular pyramids. It never receives any admixture of colour into it, nor loses the blue and green, but has its genuine tinge in the degrees from a very deep and dusky to the palest imaginable of the hues of sea-water. The beryl, when cut and polished, has a considerable lustre. It is ranked among gems; but its value is trifling compared with the ruby, sapphire, topaz, &c.

Besistan, or **Bersten**, a name given to those places at Constantinople, &c., where the merchants have their shops, and expose their goods for sale. A particular besistan belongs to each class of merchants.

Beslic, a small Turkish coin, worth about 1½*d*.

Betel, or **Betle**, a kind of long pepper found in Malabar and other parts of the East Indies.

Bettellers, a species of muslin, which comes from Madras. It is a thick sort of muslin, the finest resembling cambric, and the coarser sorts calico.

Bezestan, the public market-place in Turkey.

Bia, a name given by the Siamese to those small shells which are called cowries throughout many parts of the East

Biche de Mar, **Sea Cucumber** [Chinese, *Hoy-shun*; Port., *Beche de Mer*; Malay, *Tripang*]. Biche de Mer is the name given to a species of Holothuria found in most of the shallow seas of the Malay and Philippine Archipelagos It is found also in the upper part of the Gulf of Siam, and is so abundant on the northern coast of Australia, that the people of Celebes, receiving advances from the resident Chinese, have been long in the habit o making annual voyages thither in quest of it. Gutted, dried in the sun, and smoked, it is considered cured, and fit for its only market, China, to which many hundred tons are sent yearly. Its shape and appearance are exactly like a cucumber. The fishery of it is to China what that of the sardine, tunny, and anchovy is to Europe. It is usually caught by hand, for it has but little power of locomotion but in deep water. It is sometimes two feet long, but its common length is from four to ten inches, and its diameter two or three. For a long time the Chinese were the sole carriers of this article; but recently foreigners have engaged in the trade. In the market it appears hard and rigid, and has a dirty brown colour; when brought to the table it resembles pork rind in colour and consistency. The Chinese use it by itself, or as an ingredient in other dishes, and consume large quantities under the belief that it is an aphrodisiac. They divide it into about thirty varieties, varying in price from 80 dollars down to 1½ dollars per picul; but unless one is well acquainted with the article it is impossible to distinguish them. A great deal of this article is imported into Macao, in junks and Portuguese vessels. In the Chinese tariff all the sorts are arranged under the heads black and white.

BILANDER. A small flat-bottomed vessel with only one large mast and sail, and its deck raised half a foot above the plat board.

BILL OF ENTRY. An account of the goods entered at the Custom-house, both inwards and outwards. In this bill must be expressed the quality and quantity of merchandize, and the various kinds thereof exported or imported. The Customs regulations are:—Entries passed previously to vessels reporting not to be acted on except for fresh butter, meat, poultry, green fruit and vegetables, which may be entered the day preceding the vessel's report. Parties are not required to make post entries in cases where the duty short paid is under one shilling. Warehousing entries for East India or China silk goods subject to rated duties may be received, with the weight or measurement inserted: entries should be passed for the station at which the vessel lies instead of for the place to which the goods may have to be borne. Entries duty paid to supersede a bonding entry may be passed prior to the final discharge of the vessel. Entries warehousing the particular description of sugar may be altered upon the certificate of the landing officers, and reference to the Long-room.

BILL OF EXCHANGE is an open letter of request addressed by one person (the drawer) to a second (the drawee), desiring him to pay a sum of money to a third (the payee), or to any other to whom that third person shall order it to be paid, at a time therein specified, and when the bill has received the drawer's acknowledgement he is called the accepter. The punctuality of acquitting these obligations when made is essential to trade; for no sooner is an accepted bill dishonoured, than the parties lose their credit, and are considered in a state verging to bankruptcy. The time at which the payment is limited to be made is various, according to circumstances. Sometimes the amount is made payable at *sight*, so many days after *sight*, or at a certain space from the *date*. *Usance* is the time of one, two, three, four, or six months after the date of the bill, according to the custom of the places between which the exchanges run; and the nature of which must therefore be shown and averred in a declaration on such bill. Double or treble usance is double or treble the usual time, and half usance is half the time. A custom has also arisen among merchants that a person to whom a bill is addressed shall be allowed a few days for payment beyond the term mentioned in the bill, called *days of grace*, and the laws of commercial countries have long since recognized this custom as a right. The number of these days varies in different places. From Byles's treatise we take the following table:—"Great Britain, Ireland, Bergamo, and Vienna, *three days*. Frankfort, out of the fair-time, *four days*. Leipsic, Naumburg, and Augsburg, *five days*. Venice, Amsterdam, Rotterdam, Middleburg, Antwerp, Cologne, Breslau, Nuremberg, and Portugal, *six days*. Dantzic, Königsberg, and France, *ten days*. Hamburg and Stockholm, *twelve days*. Naples, *eight*; Spain, *fourteen*; Rome, *fifteen*; and Genoa, *thirty days*. Leghorn, Milan, and some other places in Italy, no fixed number. Sundays and holidays are included in the respite days at London, Naples, Amsterdam, Rotterdam, Antwerp, Middleburg, Dantzic, Königsberg, and France, but not at Venice, Cologne, Breslau, and Nuremberg. At Hamburg the day on which the bill falls due makes one of the days of grace; but it is not so elsewhere. *Three days* of grace are allowed in N. America, at Berlin, and in Scotland. At Rio de Janeiro, Bahia, and other parts of Brazil, *fifteen days*. At St. Petersburg *ten days* on bills after date, *three days* on bills at sight, *ten days* on bills received, and presented after they are due. At Trieste and Vienna, *three days* on bills after date. The *three days'* grace allowed in this country are reckoned exclusive of the day on which the bill falls due, and inclusive of the last day of grace." **BILLS OF EXCHANGE** are distinguished as *foreign* and *inland*; the first being those which pass from one country to another, and the latter such as pass between parties residing in the same country. *Inland bills*. It does not appear that bills of this kind were very frequent in England before the reign of Charles II., and when they were introduced they were not regarded with the same favour as foreign bills. At length legislation set both on nearly the same footing; so that what was the law and custom of merchants with respect to the one, is now in many respects the established law of the country with respect to the other. Inland bills are, however, only drawn singly, whereas foreign bills are in sets of two or three, according to circumstances. The form of an inland bill is as follows:—

£573 5s. 9d. London, 30th June, 1872.

Three months after date pay to our order the sum of five hundred and seventy-three pounds five shillings and ninepence for value received. Signature of drawer.

To Messrs. (name and address of payee.)

The date of a bill should be rightly or clearly expressed, and also the name of the place where it is made. The sum for which it is drawn should be expressed so distinctly, both in words and figures, that no exceptions can be taken against it. The time of payment should not be dubiously expressed, nor sooner nor later than that agreed upon. Although it is not absolutely necessary that bills should be written in ink, it is proper to do so, and also to take care that the payee is properly described. As regards the words *value received*, the custom has hitherto been to insert them, as it was understood that an action of debt could not lie unless the consideration was expressed. But this appears to be a mistake; for, according to Mr. Byles, a "debt will lie, although the consideration be not expressed." For "the 6th section of the 3 and 4 Anne distinctly declares that a protest shall not be necessary unless the words 'value received' appear on the face of the bill; thus leaving bills where these words are not as at common law; and at common law, no inland bill need be protested, in order to charge the drawer with interest and damages." The words are then unnecessary No inland bills can be issued for a sum under 20s., and when issued for a sum under £5, must be dated before the time of issuing, and be payable within twenty-one days from the date Each endorsement must be dated at the time of making it, and state the name and residence of the endorser, and be attested by a subscribing witness. Bills above £5 may be made payable within any time, provided that the time stated must come. When made, a bill is signed by the drawer, and either sent or presented to the drawee for acceptance, and when accepted, it must be endorsed on the back by the drawer before he can either discount it or use it in trade. A bill may be drawn, endorsed, or accepted by any person possessing a legal capacity to contract or bind him or herself to do anything. An infant cannot contract except for necessaries; therefore his bill is only good when it is for the exact sum due for necessaries. Lunatics, idiots, and so forth, cannot be parties to a bill. Married women, without authority from their husbands, cannot make, draw, accept, or endorse negotiable instruments; but "if a married woman have a separate estate and make a promissory note or accept a bill of exchange, she is liable in equity." Where there are two joint traders, and a bill is drawn on both of them, the acceptance of one binds the other if it concerns the joint trade; but it is otherwise if it concern the accepter only in a distinct interest and respect. Sometimes a draft is drawn by one person on account of another, by virtue of full power and authority given him by the latter, and this is commonly termed *procuration*; and such bills may be drawn, subscribed, endorsed, accepted, and negotiated, not in the name or for the account of the manager or branches of any or all of these branches of remittances, but in the name and for the account of the person who authorised them. *In making a bill of exchange*, the *first* part to settle is the amount. The *second* is the *stamp* which renders the instrument available as an admission of a debt. A bill for payment of money on demand requires only a stamp of one penny, but in all other cases a duty, according to the amount of the bill, is imposed. It is necessary to observe that the stamp must be impressed before the bill has been filled up, except where the amount is payable on demand, when an adhesive stamp may be used. The duties now imposed are as follows:—Draft or order for the payment of any sum of money to the bearer or to order on demand, 1*d.* Inland bill of exchange, draft, or order for the payment to the bearer or to order at any time, otherwise than on demand of any sum of money not exceeding £5, 1*d.*; ex. £5, and not ex. £10, 2*d.*; ex. £10, not ex. £25, 3*d.*; ex. £25, not ex. £50, 6*d.*; ex. £50, not ex. £75, 9*d.*; ex. £75, not ex. £100, 1*s.*; ex. £100, not ex. £200, 2*s.*; ex. £200, not ex. £300, 3*s.*; ex. £300, not ex. £400, 4*s.*; ex. £400, not ex £500, 5*s.*; ex £500, not ex. £750, 7*s.* 6*d.*; ex. £750, not ex. £1,000, 10*s.*; ex. £1,000, not ex. £1,500, 15*s.*; ex. £1,500, not ex. £2,000, 20*s*; ex. £2,000, not ex. £3,000, 30*s.*; ex. £3,000, not ex. £4,000, 40*s.*; and where the same shall exceed £4,000, then for every £1,000 or part of £1,000 of the money thereby made payable, 10*s.* Inland bill, draft, or order for the payment of any sum of money, though not made payable to bearer or to order, if the same shall be delivered to the payee or some person on his or her behalf—the same duty as on a bill of exchange for the like sum payable to the bearer or order. Inland bill, draft, or order for the payment of any sum of money weekly, monthly, or at any other stated period, if made payable to the bearer or to order, or if delivered to the payee or some person on his or her behalf, where the total amount of the money thereby made payable shall be specified therein, or can be ascertained therefrom—the same duty as on a bill payable to bearer or order on demand for a sum equal to such total amount. The *third* part of a bill of exchange is the *date*, which although not an essential part, is certainly better stated than left blank. Where undated, however, the holder of the bill would have to prove that it was made on a certain day. The *fourth part is the time of payment*; that is, the number of calendar months after *date* or after *sight*. Where no date is specified, the bill is regarded as an order on demand. The *fifth part* is the place at which payment must be made. Sometimes the drawer fixes the place, but more frequently the accepter does this: he either makes the bill payable at his banker's or his place of business. The *sixth part* is the style or description of the payee or person to whom the amount of the bill is to be paid. The *seventh part* is the name of the drawer or person who makes the bill. The *eighth part* is the name of the drawee or person to whom the bill is addressed, and who becomes the accepter when the instrument is complete. An *acceptance* is an engagement to pay a bill of exchange according to the tenor of the draft. The circumstances which generally concur in an acceptance are that the party to whom it is addressed binds himself to the payment, after the bill has been issued, by subscribing his name on the back of the bill. Formerly, an acceptance was either written or verbal, but now the acceptance must be in writing upon the bill, otherwise the instrument is not complete. Acceptance is made by the drawee, but it is competent for another person to accept as an *act of honour* to prevent the return of the bill should the drawer be in hiding or refuse to accept, or that his credit is suspected, or that he cannot by reason of some disability, render himself responsible. In any of these cases an acceptance by another person, in order either to prevent the return of the bill, to promote the negotiation of it, or to save the reputation of and prevent an action against the drawer or some of the other parties, may be made. That engagement which constitutes an acceptance is usually made to the holder of the bill, or to some person who has it in contemplation to receive it; and then the accepter must answer to him and to every one who either has had the bill before or shall afterwards have it for endorsement. Acceptances are usually *absolute*, but sometimes they are made *conditionally*. That is, for a less sum than that mentioned in the bill, or an alteration is made in the time and manner of payment; but where the acceptance varies from the tenor of the order, it is for the holder to say whether or not he will take such acceptance, and his decision is binding upon him. A conditional acceptance, when the conditions on which it depends are performed, becomes absolute. But if the conditions on which the agreement to accept a bill is made be not complied with, that agreement will be discharged. An acceptance once complete and issued, as effectually binds the accepter as if he had been the original drawer, and having once accepted it he cannot afterwards revoke it. *Endorsements* are either in full or in blank; a full endorsement is that by which the endorser orders the money to be paid to some particular person by name; a blank endorsement consists only of the name of the endorser. Blank endorsements are the most frequent, indeed, almost universal, in business. A blank endorsement renders the bill or note afterwards transferable by delivery only, as if it were payable to bearer, but one endorsed in full "must be endorsed again" by the person to whom it was so endorsed in full, in order to render it transferable to every extent; for he who endorses to a particular person declares his intention not to be made liable except by that person's endorsement over. *Presentment*. A presentment either for acceptance or payment must be made at seasonable hours; which are the common hours of business in the place where the party lives to whom the presentment is to be made. If acceptance or payment be refused, or the drawer of the bill or maker of the note has become insolvent or absconded, notice from the holder himself must be given to the preceding parties, so that they may have severally their remedy in time against the parties on whom they have a right to call. *Notice*. In the manner in which notice either of non-acceptance or non-payment is given, there is a remarkable difference between inland and foreign bills. In the former no particular form of words is necessary to entitle the holder to recover against the drawer or endorser the amount of the bill on the failure of the drawer or accepter: it is sufficient if the notice imports in distinct terms that the bill or note has been dishonoured. A notice such as the following has been held sufficient:—

London, 14th Jan., 1872.

Sir,—A bill for £393 14*s*. 6*d*., drawn by Messrs. Jones & Co. upon Mr. Robert Williams, and bearing your endorsement, has been put into our hands by Messrs. Glass, Ware, & Co., with directions to take legal measures for the recovery thereof, unless paid immediately to,

Sir, Yours &c.,

RICHARD LLOYD.

Notice should be given as soon as a bill has been dishonoured, at any rate, not later than the day following the fact. If a bill, for instance, is dishonoured on Wednesday, notice should be given not later than Thursday. *Promissory Note* is an engagement in writing to pay a certain sum of money mentioned in it, to a person named or to his order.

Form of a Promissory Note.

£250 0*s*. 0*d*. Liverpool, 3rd June, 1872.

Two months after date, I promise to pay to Robert Glass, Esq., or order, the sum of two hundred and fifty pounds for value received.

WILLIAM BROWN.

A promissory note, in its original form of a promise from one man to pay a sum of money to another, bears a resemblance to a bill of exchange. When it is endorsed the first resemblance begins; for then it is an order by the endorser to the maker of the note, who, by his promise, is his debtor, to pay the money to the endorser. The endorser of the note corresponds to the drawer of the bill; the maker to the drawee or accepter; and the endorsee to the payee. When this point of resemblance is once fixed the law is fully settled to be exactly the same in bills of exchange and promissory notes. FOREIGN BILLS OF EXCHANGE are drawn in sets of two or more, according to circumstances, the object of this being to avoid the risk of miscarriage. It is usual to dispatch one of the set in the ordinary course, and transmit another by the succeeding mail; the third is held for transmission should the first and second miscarry or be destroyed.

Form of a Foreign Bill of Exchange.

£570 19*s*. 0*d*. Bombay, 16th April, 1872.

Six months after sight of this First of Exchange, Second and Third of the same tenor and date, not paid, pay to Messrs. Pinto de Souza & Co., or order five hundred and seventy pounds fifteen shillings for value received. JOHN GILLIES.

To Messrs. A. B. & Co., London.

Stamps. If drawn singly or otherwise than in a set of three or more, the same duty as on an inland bill of the same amount and tenor. If drawn in sets of three or more, for every bill of each set, where the sum payable thereby shall not exceed £25, 1*d.*; ex. £25, not ex. £50, 2*d.*; ex. £50, not ex. £75, 3*d.*; ex. £75, not ex. £100, 4*d.*; ex. £100, not ex. £200, 8*d.*; ex. £200, not ex. £300, 1*s.*; ex. £300, not ex. £400, 1*s.* 4*d.*; ex. £400, not ex. £500, 1*s.* 8*d.*; ex. £500, not ex. £750, 2*s.* 6*d.*; ex. £750, not ex. £1,000, 3*s.* 4*d.*; ex. £1,000, not ex. £1,500, 5*s.*; ex. £1,500, not ex. £2,000, 6*s.* 8*d.*; ex. £2,000, not ex. £3,000, 10*s.*; ex. £3,000, not ex. £4,000, 13*s.* 4*d.*; and where it shall exceed £4,000, then for every £1,000, and part of £1,000, of the money thereby made payable, 3*s.* 4*d.* Foreign bill of exchange for the payment of money not exceeding £500, drawn out of the United Kingdom, but payable within, the same duty as an inland bill of the same amount and tenor. For the payment of money exceeding £500, drawn out of the United Kingdom, and payable or endorsed or negotiated within the United Kingdom—for every £100, and part of £100, of the money thereby made payable, 1*s.* *Difference between foreign and inland bills at common law.* A protest for non-acceptance or non-payment of a foreign bill of exchange is essentially necessary to charge the drawer on default of the drawee. In inland bills a simple notice, within reasonable time, is sufficient; but in foreign bills other formalities are required. If the person to whom the bill is addressed on presentment will not accept it or pay it, the holder is to take or cause it to be taken to a notary public, who, at a seasonable hour of the same day in which the bill has been dishonoured, is to present or cause it again to be presented, and if acceptance or payment be again refused, he is there to make a minute consisting of his initial, the month, the day, and the year, and reason, if assigned, for non-acceptance or non-payment. The notary will then draw up a declaration from the minute, that the bill has been presented for acceptance or payment, as the case may be, which was refused, and that the holder intends to recover all damages which he or any other person concerned may sustain on account of the non-acceptance or non-payment. The minute is termed the noting of the bill, and the declaration the *protest.* Although a bill of exchange, drawn abroad, requires no stamp when it is made, it cannot be negotiated without one. It is therefore necessary for the holder to affix an adhesive stamp according to the amount of the bill, before he can make use of it.

BILL OF LADING is a document given by the master of a ship, in his capacity of carrier, to the shipper of goods in his vessel. When goods are sent on board, the officer in charge gives a receipt for them, and on the presentation of this receipt to the master of the vessel, the shipper receives in return a set of two or more bills of lading, in which is specified that the goods have been received on board, and will be delivered in the same condition to the person named in the bill, or to his assigns. "The master must make out his bill of lading according to the directions of the shipper of the goods, or the holder of the receipt given on the shipment; for the shipper has a right to name the consignee to be mentioned in the bill of lading, even although it may not be expressed in the receipt that the goods are shipped for his account, this being tacitly understood; and if the master signs a bill of lading for delivery to another person, and delivers accordingly, he may be answerable to the shipper for the value of the goods."—*Abbott.*

Form of a bill of Lading (blank) Shipped in good order and well conditioned, by in and upon the good ship called the whereof is master for this present voyage and now riding at anchor in the and bound for the goods following (description of goods) marked and numbered as per margin, to be delivered in the like good order and condition, at the aforesaid port of (*the act of God, the Queen's enemies, fire, and all and every other dangers and accidents of the seas, rivers, and navigation, of whatever nation and kind soever, excepted*) unto or to assigns paying freight for the said goods with poundage and average accustomed. In witness whereof the master or purser of the said ship hath affirmed to bills of lading, all of this tenor and date, any one of which bills being accomplished, the other two are to be void.

(*Place and date.*) (*Signature of master.*)

"When goods are sent by a ship hired by a charter party, the bills of lading are delivered by the master to the merchant by whom the ship is chartered; but when they are sent by a general ship, *i. e.*, by a ship not hired by charter party, but employed as a general carrier, each individual who sends goods on board receives a bill of lading for the same. In all cases the bill of lading is the evidence of, and title to, the goods shipped."—*Macculloch.* "If there is any dispute," says Lord Tenterden, "about the quantity or condition of the goods, or if the contents of casks or bales are unknown, the words of the bill of lading should be varied accordingly. By the French ordinance it is required that bills of lading should contain the quality, quantity, and marks of the merchandise, the name of the merchant who loads them, and of the person to whom they are to be delivered, the place of departure and destination, the names of the master and of the ship, and the price of the freight. It is obvious that the quality, and frequently also the quantity, of the goods must be unknown to the master; and the commentator on the ordinance informs us that by the quality, the exterior and apparent quality only is meant; and further, that it is usual for the master to insert words denoting that the quality and quantity are only according to the representation of the merchant; of which practice he approves." The rights and liabilities of parties in respect of a bill of lading are regulated by the Statute 18, 19 Vict., cap. cxi., which recites that, "by the custom of merchants, a bill of lading of goods, being transferable by endorsement, the property in the goods may thereby pass to the endorser, but, nevertheless, all rights in respect of the contract contained in the bill of lading continue in the original shipper or owner; and it is expedient that such rights shall pass with the property. . . . (1) Every consignee of goods named in a bill of lading, and every endorser of a bill of lading, to whom the property in the goods therein mentioned shall pass, upon or by reason of such consignment or endorsement, shall have transferred to and vested in him all rights of suit, and be subject to the same liabilities in respect of such goods, as if the contract contained in the bill of lading had been made with himself. (2) Every bill of lading in the hands of a consignee or endorsee for valuable consideration, representing goods to have been shipped on board a vessel, shall be conclusive evidence of such shipment as against the master or other person signing the same, notwithstanding that such goods, or some part thereof, may not have been so shipped, unless such holder of the bill of lading shall have had actual notice at the time of receiving the same, that the goods had not been in fact laden on board: Provided, that the master or other person so signing may exonerate himself in respect of such misrepresentation by showing that it was caused without any default on his part, and wholly by the fraud of the shippers, or of the holder, or some person under whom the holder claims." *Stamp.* For any goods, merchandize, or effects, to be exported or carried coastwise, 6*d.* This duty is a reduction from 3*s.* in Great Britain, and 1*s.* 6*d.* in Ireland, formerly imposed.

BILL OF SALE. A registered instrument by which an individual transfers his rights in his goods or chattels named therein for some consideration to another person, empowering him to dispose of them in the event of the non-fulfilment of certain conditions. By the stamp it is provided that no copy of any bill of sale of personal chattels shall be filed in any court, unless the original be produced to the proper officers, duly stamped; and no deed or instrument liable to stamp duty shall be registered until the same is duly stamped.

BILL OF SIGHT. When importers or agents are unable to fill up a bill of entry for want of full information as regards the quantities, qualities, and values of their goods, they are allowed to land the same provisionally under a bill of sight, which is a declaration to the effect that they are without the necessary information. But a perfect entry must be made within three days by endorsing on the bill of sight a description of the goods landed. Goods are not delivered until a perfect entry has been made. In the case of a deposit having been made "for goods entered by bill of sight, and no question can afterwards arise as to the rate or amount of duty chargeable thereon, the goods may be delivered either on the whole or in part, provided the deposit made be sufficient to cover the duty due; but no deposit is to be returned at the time of passing the perfect entry until the same has been examined by the landing officer, and his certificate obtained of there being no objection to the return of the deposit."

BILL OF STORE. A licence by which individuals may re-import British goods into the United Kingdom. Goods so re-imported are taken to be, and entered as, foreign, and are liable to the same duties, rules, regulations, &c., unless re-imported within ten years after the exportation, and it be proved to the satisfaction of the commissioners of customs that the property in such goods has continued, and still remains, in the person on whose account they were exported, when they may be entered as British goods by bill of store in the form and manner the commissioners may direct, excepting the following, viz., grain, meal, flour, and hops: all goods for which drawback of excise shall have been received on exportation, unless by special permission of the commissioners of customs, and on repayment of such drawbacks, also all goods for which a bill of store cannot be issued in the usual manner, save remnants of British goods.

BILL OF SUFFERANCE. A coasting licence, by which trade may be carried on from port to port without paying customs' duty, the goods upon which duties are payable being landed at sufferance wharfs.

BILLON. When the French coin, gold or silver, is below the standard value, they give it this name.

BILLOT or BILLO, bullion of gold and silver in the mass, before it is coined.

BILLS PAYABLE. Bills of exchange and promissory notes outstanding against an individual or firm.

BILLS RECEIVABLE. Bills of exchange and promissory notes in favour of an individual or firm.

BIND OF EELS. A quantity, consisting of two hundred and fifty; or ten strikes, each containing twenty-five eels.

BING, in the alum-works, denotes a heap of alum thrown together, in order to drain.

BIRDS' NESTS [Fr. *Nids de Tunkin*, Ger. *Indianische-vogelnester*, It. *Nidi-di-Tunchino*, Sp. *Nidos-de-la China*, Hind. *Ababel*, Jav. *Susuh*, Malay, *Sarang-burong*]. The nests of a small, dark-coloured swallow of a greenish hue on the back, a bluish one on the breast, and no white mark; peculiar to the Indian islands. The esculent nest is found all over the Malay and Philippine Archipelagos, on the Malabar coast, and the Tenasserim Provinces. But Java and Borneo seem to be their chief resort. The nests used by the Chinese are brought principally from Java and Sumatra. They are composed of a mucilaginous substance, but what the constituent parts are we have no accurate knowledge. Externally they resemble ill-concocted fibrous isinglass, and are of a white colour, inclining to red; their thickness is little more than that of a silver spoon, and their weight from a quarter to half an ounce. When dry they are brittle and wrinkled; the size is little larger than a goose-egg. Those that are dry, white, and clean are the most valuable. They are packed in bundles, with split rattans through them to preserve their shape. The most part of the best kind is sent to Pekin for the use of the court. The Chinese consider the nests as a great stimulant and tonic. The labour bestowed to make them fit for the table is said to be enormous. The sale of these articles is a monopoly with all the governments in whose dominions they are found. It is estimated that about 243,000 lbs, valued at $1,250,000, are annually sent away from the archipelago, most of which is brought to China. They are assorted for the Chinese market into three kinds, according to their qualities, and the common price for birds' nests of the first sort at Canton is about $500 per pecul, or nearly £6 per lb.

Birmingham Wares [Ger. *Kurze waaren*, Du. *Yzerkramery*, Da. *Isenkrammevarer*. Sw. *Järnkram*, Fr. *Clinquaillerie*, *Quincaillerie*, It. *Chincaglie*. Sp. *Quinquilleria*, Port. *Quincalharia*, Rus. *Mjelotschnüe towarü*] are all sorts of toys in gold, silver, steel, brass, &c.; buttons, buckles, &c., &c.

Birth. In the sea language, a convenient place to moor a ship in, also a due distance observed by ships lying at anchor, or under sail; and a proper place on board for a mess to put their chests, &c., is called the birth of that mess.

Bitter, a sea term, signifying any turn of the cable about the bits, so that the cable may be let out by little and little; and when a ship is stopped by a cable, she is said to be brought up by a bitter. Also that end of the cable which is wound about the bits is called the bitter end of the cable.

Bittern, in the salt-works, the brine remaining after the salt is concreted; this they ladle off, that the salt may be taken out of the pan, and afterwards put in again; when being further boiled, it yields more salt. *See* Salt.

Bitumen [Ger. *Judenpech*, Du. *Jodenlym*, Da. *Jedeberg*, Sw *Judebeck*, It. *Asfalto*, Sp. *Asphalto*, Port. *Asphalto*, Rus. *Asfalt*, Pol. *Kley ziemsky*, Lat. *Apshaltum Bitumen judaicum*] is a tenacious mineral substance, or fossil body, not soluble in water. There are a great number of substances ranked under the general head of *bitumens*; as amber, ambergris, jet, asphaltum, phisasphaltum, pit-coal, mineral pitch and tar, &c. *See each under its proper head.*

Bis, twice, used in accounts to denote duplicates of folio or of accounts.

Bisa, Biza, or Bize, a coin of Pegu, which is current there for half a ducat.

Bismuth [Ger. *Wismuth*, Fr. *Bismuth*], a heavy metal of a much harder and firmer texture than antimony, not being easily pulverised in a mortar, as that is, though not yielding to the hammer nor showing the slightest sign of ductility. It is very susceptible of rust, and in itself is scarcely sonorous, yet mixed with other metals it adds to their sonorous quality, at the same time that it renders them more brittle; these two properties depending in a great measure on the same principles. It is of a fine bright silver colour, and of a remarkable structure, being composed of small fasciæ of plates, dispersed irregularly amongst one another. It gives evident tokens on trial of a sulphur contained in abundance in it, and after the action of an acid, it exudes a bituminous matter. It requires but an extremely small degree of fire to fuse, melting almost before any other metallic substance, and it is not fixed in the fire, but evaporates with a very moderate degree of heat. It very readily amalgamates with mercury, and has this peculiar quality that, when mixed with other metals, in amalgamation with that body, though but in a very small quantity, it makes them run thinner, and occasions a great part of them to be carried through leather, in straining together with the mercury. Bismuth causes the metals that are difficult of fusion to melt with a much smaller degree of fire than they otherwise would do. It is very readily dissolved in vinegar, and communicates a saccharine taste to it; it may also be dissolved in the stronger acids, as the spirit of sea-salt, spirit of nitre, and aqua fortis; from these solutions in the stronger acids it is easily precipitated, and forms a fine white powder called magistery of bismuth, often used as a cosmetic.

Bhaaral, Nepaulese sheep.

Bhang, an intoxicating drink used in the East Indies. It is obtained from the hemp plant.

Blacking [Ger. *Schuhschwärze*, *Wichse*, Du. *Schoenzwartsel*, Da. *Skoesværte*, Sw. *Skosvärta*, Fr. *Noir* (*de cordonnier*), It. *Nero da ugner le scarpe*, Sp. *Negro de sapatos*, Port. *Negro de sapatos*]. Shoeblacking. A fine blacking may be made in the following manner. To four ounces of ivory black, add three ounces of the coarsest sugar, a table-spoonful of sweet-oil, and a pint of small beer; mix them *cold*.

Black Lead Pencils [Ger. *Bleystifte*, Du. *Potlootpennen*, Da *Blyantspenne*, Sw. *Blyertspennor*, Fr. *Crayons noirs*, It. *Lapis nero*, Sp. *Lapis negro*, Port. *Lapis negro*, Rus. *Karandaschii*, Pol. *Bleyczyk*] are formed of black lead alone, sawed into slips, which are fitted into a groove made in a piece of wood, and another slip of wood glued over them; the softest wood, as cedar, is made choice of, that the pencil may be the more easily cut; and a part at one end, too short to be conveniently used after the rest is cut away, is left unfilled with the black lead, that there may be no waste of so valuable a commodity. As there is great room for fraud in the pencil-making, persons frequently take the finer pieces of black lead, which they saw into slips, and fix for use in porte-crayons.

Black Pepper [Fr. *Poivre*, Ger. *Schwarzen pfeffer*], a well-known small dark berry or fruit having an aromatic pungent hot taste, used as a condiment in seasoning. The best is that of Malabar, which is largely imported into Bombay and re-exported to England, France, the Persian and Arabian Gulfs, and Calcutta. Pepper is also produced in Siam, Malacca, Sumatra, and other islands of the Indian Archipelago.

Blackwood, the timber of different species of *Diospyros*, which grow in various parts of the East Indies. It is brought to Bombay from the Malabar coast, and is largely used in the manufacture of household furniture. Every locality has a wood that is known by this name. Holtzappfel mentions that East Indian Blackwood is from the *Dalbergia Latifolia*, called Blackwood tree by the English, and Sit Sal by the natives on the Malabar coast, where it grows to an immense size. The wood of the trunk and the large branches is extensively used for making furniture; it is heavy, sinking in water, close grained, of a greenish black colour, with lighter coloured veins running in various directions, and takes a fine polish.

Bladders [Ger. *Blasen*, Du *Blaasen*, Da. *Blærer*, Sw. *Blasor*, Fr. *Vessies*, It. *Vesciche*, Sp. *Vejigas*, Port. *Bexigas*], a thin membraneous substance, found in several parts of an animal, used by painters for holding oil, &c., and also by druggists and chemists for a variety of purposes

Blade [Ger. and Du. *Klingen*, Da. *Klinger*, Sw. *Blader*, *Klingor*, Fr. *Lames*, It. *Lame*, Sp. *Hojas*, Port. *Folhas*, Rus. *Klinki*, Pol. *Glownie*], a thin piece of metal, extended either in length or breadth, beaten with a hammer, or cast into a mould. It is said particularly of that part of a sword, dagger, bayonet, or other offensive weapon that pricks or cuts. We also say the *blade* of a knife, the *blade* of a razor, to signify that part of those instruments which cuts or shaves. All those sorts of *blades* are of very fine-tempered steel, or at least of iron very well sharpened. The *blades* of Damascus and England are most valued. Those of Toledo are highly esteemed. In England blades were at one time prohibited from being exported.

Blank is a piece of paper, at the bottom of which a person has signed his name, the rest being void. *Blanks* are commonly entrusted in the hands of arbitrators or friends, to be filled up as they shall think proper, to terminate any dispute or law-suit. A man must be thoroughly certain of the honesty of those whom he trusts with such a blank. A *blank letter of attorney* is one in which a void space is left to be filled up with the name of the person who is to act. *A blank endorsement on bills of exchange*, when one only writes his name on the back of it, leaving an empty space sufficient to write either an order or a receipt. *Blank* is also a term used to denote an unfortunate chance in games of hazard, as lotteries, &c.

Blankets, coverlets for a bed; a stuff commonly made of white wool, and wrought in a loom like cloth; with this difference, that they are crossed like serges. When they come from the loom, they are sent to the fuller; and after they have been fulled and well cleaned, they are napped with a fuller's teazle. Blankets made of sheep's wool are divided into several sorts: of the head and bay wool the widest are made; and narrow ones of the middling and common sort. There are also blankets made with the hair of several animals; as that of goats, dogs, and others. There is a great manufactory of blankets near Whitney, in Oxfordshire, &c.

Blanquil, or **Blanquille**, a small silver coin of Morocco, equal to about twopence sterling.

Blasting, a term used by miners for the tearing up rocks which lie in their way, by the force of gunpowder. In order to do this, a long hole is made in the rock, which being charged with gunpowder, is filled up; a touch-hole being left, with a train or match to fire the charge.

Blocks [Ger. *Blocke*, Fr. *Poulies*], the name given on board ship for what are called pulleys on land. They are thick pieces of wood, some with three, four, or five shivers in them, through which all the running ropes run. Blocks, whether single or double, are distinguished and called by the names of the ropes they carry, and the uses to which they are put. Double blocks are used when there is occasion for much strength, because they will purchase with more ease than single blocks, though much slower.

Block-and-Block is a phrase signifying that two blocks meet in hauling any tackle or halliard having such blocks belonging to them. *Fish-block* is hung in a notch at the end of the davit. It serves to hale up the flakes of the anchor at the ship's prow. *Snatch-block* is a great block with a shiver in it, and a notch cut through one of its cheeks to receive more readily a rope; as by this notch the middle part of a rope may be received into the block without passing it endwise. It is commonly fastened with a strap about the main-mast close to the upper-deck, and is chiefly used for the fall of the winding tackle, which is received into this block and then brought to the capstan.

Block-tin, pure unmixed tin of the best quality.

Blood-stone [Ger. *Blutstein*, Du. *Bloedsteen*, Da. *Blodsteen*, Sw. *Blodsten*, Fr. *Pierre sanguine à crayon*, It. *Sanguigna*, Sp. *Piedra Sanguinaria*, Port. *Pedra sanguinaria*, Rus. *Krowowik*, Pol. *Krwawnik*, Lat. *Hæmatites*], or the *lapis hæmatatiles*, is a mineral of a reddish colour, hard, ponderous, with long-pointed needles. It is found among iron ore in great abundance. These stones are to be chosen of the highest colour, with fine striæ or aculeæ, and as much like cinnabar as possible.

Bloom, a mass of iron after having undergone the first hammering, called bloomery.

Blotting Paper [Ger. *Losch papier*, Du. *Vloej papier*, Da. *Svob-papier*, Sw. *Plan-papper*, Fr. *Papier brouillard*, It. *Carta sugante*, Sp. *Estraza*, *Teleta*, Port. *Papel pesente* or *Mataborra*, Rus. *Propuss-knaja bumaga*. Pol. *Bibiela*. Lat. *Charta emporetica*] is a paper not sized, and in which ink readily sinks; it is used in books of accounts, &c., in lieu of sand to absorb ink. It is also used by apothecaries for filtering. *See* Paper.

Blubber [Ger. *Thran*, *Fischtran*, Du. *Thraan*, Da. and Sw. *Tran*, It. *Olio di pesce*, Sp. *Grassa*, *Aceite de pescado*, Port. *Azeite de peixe*, Rus. *Salo worwannoe*, *Worwan*, Lat. *Oleum piscinum*], the fat of whales and other large sea-animals, of which is made train-oil. The blubber is the *adeps* of the animal; it lies under the skin, and over the muscular flesh; it is about six inches in thickness, but about the under-lip it is two or three feet thick. The quantity yielded by a good-sized whale amounts to from forty to eighty hundred weight, or even more. The use of the blubber to the fish seems be partly to poise the body, and partly to keep off the water at some distance from the blood; and thus it acts as clothing to keep the fish warm.

Blue Cloth is largely made in Southern India; and at Pondicherry there is a manufacture of considerable importance.

Boards [Ger. *Bretter*, Du. *Borden*, Da. *Brœder*, Sw. *Bräder*, It. *Assi*, Sp. *Tablas*, Port. *Taboas*, Rus. *Doski*, Pol *Deski*. Lat. *Axes*, *Tabulæ*], long pieces of timber, sawed thin, for building, and several other purposes. The trees of which boards are chiefly made, are the walnut, beech, oak, fir, pear-tree, and poplar. Deal boards are imported from Memel, Norway, Narva, Stockholm, &c.

Bobbin, or *Lace Bobbins* [Ger. *Spitzenklöppel*, Du. *Klossen*, Da. *Kniple-stokke*. Sw. *Knoppel pinner*, Fr. *Fuseaux*, It. *Mazette*, *Trafusole*, Sp. *Bolillos*, Port *Bilros*, Rus. *Kokliuschki*], a small piece of wood turned in the form of a cylinder, with a little border jutting out at each end, bored through to receive a small iron pivot. It serves to spin with the spinning-wheel, or to wind thread, worsted, hair, cotton, silk, gold, and silver.

Bollos. In the mines of Peru a denomination given to the ingots or bars of silver procured there from the ore by the operation of fire and the use of aquafortis.

Bolsters. In the sea language small cushions, or bags filled with tarred canvas or rope-yarn, &c., and placed under the shrouds and stays to prevent their chafing against the trestle-trees, by the motion of the mast, when the ship rocks at sea.

Bolts. In a ship, are iron pins, of which there are several sorts, according to their different makes and uses. Such as *drive bolts*, used to drive out others; *rag bolts*, with jags or barbs on each side, to keep them from flying out of their holes; *clench bolts*, which are clenched with rivetting hammers; *forelock bolts*, which have at the end a forelock of iron driven in to keep them from starting back; *set bolts*, used for forcing the planks and bringing them close together, *fend* or *fender bolts*, made with long and thick heads, and struck into the uttermost bends of the ship, to save her sides from bruises; and *ring bolts*, used for bringing to the planks, and those parts whereto are fastened the breeches and tackles of the guns.

Bombasine, a name given to two sorts of stuffs, the one of silk, and the other crossed of cotton.

Bombay, *Presidency of*, is one of the three great presidencies of India. It is bounded on the north by the dominions of the Guicowar of Baroda and the Holkar family; on the east by the possessions of Scindia and part of those of the Nizam; on the south by the territories of Madras and the Portuguese possessions; and west by Guzerat, the Arabian Sea, and the Gulf of Cambay. Its greatest length, in a direction nearly from south-east to north-west, is about 660 miles; its greatest breadth, from Oolpar, in the district of Surat, to a point near Boothanpoor, on the Taptee, 240 miles. *Area* subject to the British Government, 87,639 square miles. In proportion to its area this Presidency has the advantage of an extensive seacoast, reaching from south to north, from near Vingorla, adjoining the Goa frontier, to Cambay, at the head of the Gulf of the same name, a distance of 480 miles. *Pop.* 11,093,512. *Havens.* Dewghur, Geriah, Jygurh Rajapur, Choul, Bombay, Bassein, Damaun, Surat, Broach, Carwar, and others. With the exception, however, of that of Bombay, none of those can be approached and quitted with safety while the south-west monsoon prevails. *Staple crops.* Rice, bajra, jowra, barley, grain, kodroo, and some inferior grains. The native sugar cane flourishes in some of the collectorates. In the Zellah of Poonah the cultivation of the Mauritius cane has greatly diminished, the cause being attributed to the poverty of the Deccan soil north of the Krishna. Wheat is produced generally in the northern part of the Presidency, and is extensively cultivated in the provinces of Guzerat. The great cotton-producing districts are the collectorates of Dashwur, Belgaum, and Canara. There are, or were lately, nearly 3,000,000 acres of this staple under cultivation throughout the Presidency. The other products are chiefly tobacco, oil, plants, and indigo. The potato has been introduced successfully in the collectorates of Pounah and Kaira. The chief markets for the root are Bombax, Poona, Dhoolia, Aurungabad, Jaulna, and Hingolee. *Timber.* Among the trees found in the Bombay territories are the teak, Bombax acacias of various kinds, especially the catechu, the Bassia latifolia or mhowa, the petals of which, when dried, resemble raisins in appearance, and are largely consumed for food as well as for distillation. *Manufactures.* Unable to compete with British goods, the cotton manufacturers of Surat, and those of silk of Boorhanpoor, once so famous, have now sunk to very little importance.

Bombay, *City of.* A seaport of great importance, and the chief place in the Presidency of the same name. *Lat.* 18° 56′ N. *Lon.* 72° 57′ E. *Pop.* 816,562, distinguished as follows: Europeans, 8415; Indo-Europeans, 1891; Native Christians, 19,903; Jews, 2872; Africans, 2074; Chinese, 358; Parsees, 49,201; Brahmins, 30,609; Buddhists, 8021; Bhatia, 21,771; Hindoos, 523,974; Lingaet, 1598; Mussulmans, 145,880. The island on which the city stands extends from north-east to south-west eight miles, with an average breadth of three, and landlocks the harbour lying between it and the mainland. *Area* of the island, about 19 square miles. *The Harbour* is a large expanse of water, covering an area of 50 square miles. It is regarded as one of the safest and most commodious in the East. On the extremity of the island of Colaba stands the lighthouse, which, in clear weather, may be seen at a distance of fifteen miles. Stretching south-west is a dangerous prong, one of a reef of rocks surrounding the point, and lying due east from the lighthouse is a sunken rock, and also a bank called the middle-ground, which it is necessary to clear before a vessel can proceed inwards. *Docks.* The rise and fall of the tide being considerable, capacious docks have been constructed, in which shipping of the largest class have been built and repaired The ordinary spring tides rise often as high as 17 feet, and seldom less than 14. *Port establishment.* A shipping-master, a deputy, an accountant, a master-attendant, and a conservator of the port, with two assistants and 17 pilots. *Port dues.* 2 annas per ton of burden, and 1 anna per ton when ships enter with ballast. *Pilotage in and out the harbour* varies according to the season. Ships from 100 to 300 tons are charged in the fair season 50 rupees, and during the monsoon 75 rupees, ships from 1000 to 1100 tons, 90 rupees in the fair season, and 115 rupees during the monsoon; ships 1900 to 2000 tons, 135 rupees in the fair season, and 160 rupees during the monsoon. If a pilot's services are dispensed with for the day after he has arrived on board, a fee of 20 rupees is charged by the master-attendant. *Commerce.* Before the civil war in America the trade of this port was extensive; but it fell far short of the proportions which it afterwards assumed when the manufacturers of Lancashire turned their attention to it, and demanded supplies of cotton to keep their machinery going. The demand for the staple induced the ryots to cover their lands with the cotton-tree; and as capital was forthcoming abundantly, not alone from the middle-men, or what we may call the farmers' bankers, but from every European capitalist in Bombay, the quantities raised and exported were soon enormous, and every season rising higher and higher. As prices rose in Liverpool, the more confident grew the planters and speculators, and the greater were the facilities to obtain advances, either against crop or shipments. Money, during this time, was accumulating at a rate that had never been known before; new banks and financial associations were rearing their heads in all directions, and the shares of the old institutions rose to extraordinary figures. The fact is, prosperity had come upon everybody so suddenly that no one knew exactly what to do with his money. The device of burying bags of gold mohurs and rupees in the earth, as had been the favourite custom of the natives, was disregarded, as even the ryot discovered that banking his cash at interest was a more profitable course than putting it into a hole. More banks were established, and more financial institutions floated; and when the fever for banking had somewhat abated, companies were started to reclaim from the sea every inch of ground that could be got at in Back Bay and in the direction of Magazon. The abundance of money enhanced materially the cost of European manufactures. The piece goods market was the one mainly affected. Importers indented so largely that, notwithstanding heavy sales daily, their go-downs were constantly full of goods, and, as if they were convinced that their good fortune would last for ever, they continued to order more piece goods. With the fall of Richmond, however, fell nearly, if not all, of the new financial companies, and the old banks, with but one or two exceptions were so sorely hit by the blow that for some time after shares were perfectly unsaleable. Indeed, business for a short time was almost suspended, as the fall of one shilling per lb. in cotton at Liverpool created such distrust as to cause the different managers of the Banks to decline business until instructions from home reached them. Then it was the importers suffered; the acceptances of their correspondents, which they were bound to meet, were maturing at home, while they (in Bombay) were unable either to effect sales of goods to the native buyers or credits to the banks. The consequence was that several of the largest and most respectable of the import houses failed, in company with a long list of merchants, both European and native. Since that year (1865), such are the extraordinary resources of the mercantile community in the island, trade has increased rather than diminished, and it seems probable that, in the course of a few years more, Bombay will become the commercial capital of the East. The following figures will show the rate of progress of the import trade:—1850-1, value £6,907,969; 1853-4, £6,701,394; 1860-61, £15,415,419; 1863-64, £30,407,409; 1865 (the year of the panic), £26,659,368; 1866, £30,056,142; 1867, £19,372,955; 1868, £20,476,046; 1869, £24,128,314.

The goods chiefly imported are Manchester cottons and yarns, such as grey and white shirtings of medium quality, calico prints, and mule and water twist. Copper is an article greatly in demand, as also yellow metal. There is always a fair demand for coal, and a good market for beer. Cutlery of all descriptions is readily saleable, and of late years haberdashery wares have been much wanted. The external trade is carried on principally with the United Kingdom and France, China, the ports of Arabia and the Persian Gulf, and Mauritius There is a very considerable coasting-trade carried on from Kurrachee southwards to Cochin, but this trade almost ceases during the south-west monsoon, which sets in about the middle of June and closes early in October. The *exports* are cotton, which takes the lead; next opium, grain, and pulse seeds, spices, sugar, silk, dyes, and a variety of minor articles. The value of this trade will be understood from the following figures: 1850-51, values £6,760,464; 1853-4, £8,128,542; 1860, £17,564,881; 1863-64, £38,518,725; 1865, £41,602,901; 1866, £36,865,457; 1867, £21,883,946; 1868, £25,528,619; 1869, £23,770,307.

Customs tariff. Apparel, including haberdashery, candles, drugs and medicines, fruits, gums, metals, naval stores, oils, paints, provisions and oilmen's stores, seeds, shells, spices, sugar and sugar-candy, timber, &c, 7½ per cent. Carpets, piece goods, flax manufactures, grass and other-cloths of China manufacture, cables, oil and floor cloth, shawls, silk piece goods, woollen piece goods, 5 per cent Cotton twist, 3½ per cent.; ale, beer, and porter, 1 anna per imperial gallon, iron, railway materials, telegraph stores, 1 per cent.

Banks. These consist of the Agra Bank (Limited); Chartered Bank of India, Australia, and China; Chartered Mercantile Bank of India; Comptoir d'Escompte de Paris; National Bank of India; Oriental Bank Corporation, the New Bank of Bombay (the old bank succumbed during the crisis). *Money* 1 pie=⅛d; 12 pie=1 anna=1½d.; 16 annas=1 rupee=2s.; 100,000 rupees=1 lac=£10,000; 100 lacs=1 crore=£1,000,000. *Weights.* 4 dhan=1 raktica or gunj=2·1267 grains troy; 0·1182 tola=8 raktica=1 musha=17·0139 grains troy; ·09452 tola=4 musha=1 tank=2·4889 drachms avoir.; ·37809 tola=72 tank=1 seer=11¼ oz. avoir; 40 seer=1 maund=28 lb; 20 maunds=1 khandi=560 lb. *Lineal measure.* 3 jan=1 angli=¾ inch; 4 angli=1 muthi=3 inches; 12 angli=1 Big Hath of Bilisht=9 inches, 2 Big Hath=1 Hath or cubit=18 inches; 2 Hath=1 gaz or yard=3 feet; 4 Hath=1 danda or bam=2 yards; 1·8887 thebris=2000 dander; 1 kos=4000 yards, 4 kos=1 yojan=9 1/11 miles.

BOND. A bond, or obligation, is a deed whereby the obligor, or person bound, binds himself, his heirs, executors, and administrators, to pay a certain sum of money, or do some other act; and there is generally a condition added that, if he do perform such act, the obligation shall be void, or else remain in full force; as performance of covenants, standing to an award, payment of rent, or repayment of a principal sum of money with interest, which principal sum is usually half the sum specified on the bond. 2, *Black.*, 340.

BOOKKEEPING: the art of recording and stating mercantile transactions in such a manner as to exhibit to the merchant and trader a comprehensive view of the exact state of his affairs at all times, viz., the quantity and value of all the goods which may have been or still ought to be in his warehouse, or in the hands of any other person on his account; the debts due to and by him; the amount of his expenditure; and the profit and loss that may have arisen upon the different articles in which he deals. The only method of bookkeeping which has been found capable of affording every desirable information is called the Italian Method by double-entry. This mode is now practised in most counting-houses of established regularity, and though certainly requiring attention, is by no means so complex or laborious as its enemies would endeavour to make it appear. The principles of this method are manifestly deducible from the science of algebra, which was brought into Italy from Arabia. Lucas Paciolus, who first taught it in Venice in 1495, was conversant with the discoveries of the Arabs on that subject Who was the inventor, however, is a question which remains to be determined. The Banians of India have been in possession of bookkeeping by double-entry from time immemorial, and it is supposed "that not only the ancient Romans had this art of double-entry bookkeeping long amongst them, but that they originally received it, as they did the greatest part of all their knowledge, from the Greeks."

The mode of keeping books may be varied according to the peculiar nature of the business transacted, but, properly speaking, there are but two kinds,—that which we have already referred to, and bookkeeping by single entry. SINGLE ENTRY is the most simple and concise method, but it is imperfect, as it contains personal accounts only. The ledger kept on this plan affords to the owner a knowledge of what debts are due to him, and of what he owes to others, but it exhibits no account of the quantities of goods bought and sold, nor of the stock in hand. This mode of keeping books is best adapted to a retail business, in which the articles sold are small and numerous. The principal books used by shopkeepers are a day-book and a ledger The *day-book* records every transaction by which new debts are contracted or former ones discharged. The entries may be made either in the style of Dr. and Cr., as Joseph Smith Cr, George Brown Dr., or bought of Joseph Smith and sold to George Brown. The rule is this: the person who receives anything is Dr., and the person who gives or delivers anything is creditor. Thus if you sell goods to any person on credit, he, being the *receiver*, is Dr. for the value, and when he pays you for them, he, being the person who gives, is Cr. By the same rule the person from whom you purchase goods on credit, he being the *deliverer*, is Cr., and when you pay him for them, he, being the *receiver*, is Dr. The *ledger* contains an account for every person of whom goods are bought or to whom goods are sold on credit, where the articles for which he is accountable to you, and those for which you are accountable to him, are placed on opposite pages of the same folio, the Dr. articles on the left, and the Cr. articles on the right hand page, in order to show the state of every person's account at one view. The difference between the Dr. and Cr. sides is called the balance of the account. Besides the above two books a cash-book is generally kept for entering money received and paid. When bill transactions are frequent, a book of bills receivable and payable will also be necessary for entering bills received and bills accepted. When these are negotiated or paid, the persons concerned are then debited *to* or credited *by* cash from the day-book. *Directions for posting and balancing:* Some shopkeepers have their ledgers ruled with two sets of money columns on the same page; the one for extending the sums of the Dr., and the other for the sums of the Cr. Others, when the business is extensive, keep two ledgers, one for the Drs. or those to whom they sell, called the retail or sales' ledger, and the other for the Crs. or those from whom they purchase, called the wholesale or bought ledger. To post the ledger, first open an account for every person occurring in the day-book, and allot such a space as you may think sufficient for subsequent entries. The titles of the accounts should be written in a half-text hand, and entered in an index. The titles of the accounts are entered alphabetically in the index: that is, personal accounts by the first letter of the surname, companies by the surname of the person who stands first in the firm, and every other account by the first letter of the first word When the accounts have been indexed, debit or credit the person for the amount as stated in the day-book; that is, write the day of the entry on the margin, and say *To Goods* or *Cash*, or *By Goods or Cash*, as the case may be; insert in the folio column the page of the day-book from which you are posting, and the sum in the money column. When the space allotted for any person's account is filled up, it must be transferred to another folio. Either the sum or the difference of the two sides may be inserted in the new folio. In order to strike a *general* balance, take the difference of every account and collect into one sum the several balances due to you, to which add the cash in hand from the cash-book, and the value of the goods taken by an inventory. From this sum deduct the amount of the several balances owing by you, and the difference will be your *net stock*, or the clear value of your property. This compared with your former stock, will show the gain or loss on the business since last balance.

BOOKKEEPING BY DOUBLE ENTRY: *Elementary principles and rules.*—The method of bookkeeping by double entry is founded on very general principles, and is the most certain in its conclusions. By it for every sum entered on the Dr. side of any account the same sum must be carried to the Cr. side of other accounts; and it follows from this that an error cannot easily pass unnoticed, because the sums of the Dr. and Cr. sides must be equal. The ledger, when properly kept, exhibits in a clear and concise point of view not only the debts due to or by the owner as in single entry, but the amount of the cash and bills, the amount of the purchases and sales, the value of the quantity on hand, and the gain or loss on such articles, or on the whole. This method of bookkeeping is, therefore, best adapted to extensive and complicated business. The matter which a merchant's books should contain is as follows:—*First* The debts owing to him and those which he owes to others. *Secondly*. The goods and other property belonging to him at the commencement of the books; the amount sold or otherwise disposed of; and the quantity and value still on hand. *Thirdly*. His stock or capital at commencement; the profits he has acquired, or the losses sustained, and the amount of his present stock. DAY-BOOK AND SUBSIDIARY BOOKS. *Daybook:* This book records the sales or disposal of such goods as the merchant has on his own account, and any other transaction which cannot with propriety be entered in any of the rest of the books. Sometimes the day-book contains the amount of the several purchases, and also of the shipments, with a reference to the invoice book for particulars. Some accountants enter also in the day-book the sales on consignments as they are made; and at the end of the month when the sales are finished they are collected and transcribed into the sales-book. The transactions of each day are recorded in this book as they occur, the articles separated from each other by a line, and each day commenced by the insertion of the date in a conspicuous manner. Care must be taken that the entries in the day-book are correct before they are journalized, or the error will necessarily go through all the books. The style of entry should be concise but not ambiguous, explanatory but not verbose. *The Invoice Book* contains the particulars of goods purchased. It is usually made of blue cartridge paper, on which the original invoices are pasted when checked. Sometimes this book is dispensed with by having the original papers filed up, and only the seller's name, date, and amount of the purchase entered in the day-book. *Shipment Book* or invoice book outwards: Here are entered goods as they are sent off, either in consequence of orders from the person or company to whom they are addressed or consigned for sale. *The Account Sales Book:* Here are entered the sales of goods consigned, and the charges thereon, as customs duties, warehousing, insurance, commission, brokerage guarantee, &c., with the net proceeds ascertained. It is necessary that this book should contain the account sales correctly in the form in which they are rendered to correspondents. *The Cash Book:* On the left-hand page or Dr. side are entered all sums of money received, and on the right-hand page or Cr. side all sums paid. This book enables the cash-keeper to check the money on hand as often as he finds it necessary, and it reduces the cash account in the ledger to twelve lines; that is, one for each month of the year. *The Bill Book:* In one part of this book are entered all bills which the merchant receives, and in the other all bills which he grants or accepts. It is ruled with a number of columns for the different clauses of the bills; as the date when received or accepted, on whom drawn, or to whom granted; when and where payable; the sum of the bill and the *event*, that is whether paid, discounted, or protested These books, when no others are kept, contain the materials from which the journal and ledger are composed, and, therefore, should be kept with the greatest precision and accuracy, and every calculation in them should be examined before it is journalized and posted; for a mistake in any of them must, of course, run through the journal and ledger.

The next book to be considered is the *Ledger*, because though the *Journal* comes before it in the order of writing, it is necessary to afford some idea of the nature of the *Ledger*, and of the particulars it contains, before the reasons of the different modes of journalizing can be easily comprehended. The LEDGER collects together articles of the same kind under their respective heads, and for this purpose it is divided into several accounts, the Dr. and Cr. of each being opposite. Accounts in the ledger are of three kinds. First, *personal accounts*, which are opened with any person or company with whom there may be any dealings on credit. If the balance of the year be on the Dr. side it shows what these persons are indebted to you; if it be on the Cr. side, what you owe to them. Secondly, *Real* accounts, or accounts of property of whatever kind, viz., cash, goods, ships, houses, lands, shares in public companies, Government securities, &c. The cash account contains on the Dr. side the sum of money we receive, and on the Cr. side the money we pay. The balance shows the cash on hand. Goods contains on the Dr. the amount of the purchases and all charges, on the Cr. the sales and other returns. The *balance*, after valuing the quantity on hand, is placed on the Cr. side, and shows the gain or loss. In general, accounts of properties contain on the Dr. the value of the property, expenses laid out on them; on the Cr. the sales, or advantages arising from them, such as freights, rents, or the like. The balance is the gain or loss when the value of the property or subject on hand is added to the Cr. Thirdly, *Fictitious or Nominal* accounts, which are all such as are neither personal nor real, and are introduced to exhibit the result of both. They are denominated Stock, Profit and Loss, and subsidiary accounts and balance.

Stock account is the representation of the merchant's estate, and exhibits a general view of the amount and disposition of all the property in his possession at the commencement of his trade, and of all the debts due to and owing by him; the balance between which shows the amount of what he is worth, or has at that time employed in trade. At the closing of the books, the profit being added to or loss deducted from, will show its actual amount. *Profit and loss* account contains on one side every article of gain, and on the other every article of loss. The balance shows the net gain or loss, which is transferred to stock when the account is closed. Many of the items occur during the progress of the trade, but the generality are collected from the real accounts when the books are balanced. To shorten and methodize this matter several subsidiary accounts are used, such as the following:— *Charges:* On the Dr. are entered all expenses paid or incurred on the business which do not belong to any particular account; on the Cr. usually the sums charged to correspondents for postages, warehousing, &c. For convenience, sometimes this account is first debited with the charges on shipments, and then credited for the same. *Interest:* On the Dr. all sums paid or incurred by us for interest or discount on bills or accounts in receiving a settlement; on the Cr. side the sums for interest or discount allowed. *Commission:* On the Cr. are the sums received as an allowance for the trouble of transacting business for others. It is not usual to have entries on the Dr.; and if there be any it must be commission we owe to others; for instance, bankers on whom bills are drawn and who charge commission. *Insurance* is made Dr. for the sums insured with others; and Cr. when these sums are charged to the respective accounts on which they are due. These or other accounts may be used at discretion, according to the nature of the business for which the books are kept. *Balance* account is instituted at the closing of the books for the same purpose as that of Stock at the opening of them, viz., to show the exact state and disposition of the property in trade on the one hand, and, on the other, the debts with which that property is chargeable; the difference between the two sides of this account will be the net amount of the estate of the merchant; and as the balance of the Stock account after the addition of the profit or the deduction of the loss shows what ought to be the amount of the property, the balance of Stock account must be the same as that of Balance account; and for the purpose of closing the books, they are balanced by transferring the balance of the one to the other.

The Journal is a fair record of all the transactions of a house of business compiled from the day-book and the subsidiary books, in such a manner as to show to what accounts they are entered in the ledger. To make a journal entry it is necessary to consider to what accounts in the ledger the item will require to be placed both on the Dr. and Cr. sides. In all cases the following rules will apply:—(1) Personal accounts. The person to whom any article is delivered on credit is—Dr. The person from whom any article is received on credit is—Cr. (2) Real accounts. Every article bought or received is—Dr. Every article sold or delivered is—Cr. (3) Nominal accounts. Profit and Loss:—For any loss or charge is—Dr. For any gain or advantage is—Cr.

POSTING AND BALANCING THE LEDGER.—The first thing to be done in the ledger is to allot a proper space for each account. The accounts may be either opened in the same order that they occur in the journal, or accounts of the same kind may be placed together—the personal accounts in one part of the ledger, and the real accounts in another. The accounts of stock and profit and loss are generally placed at the beginning. The room which each will require cannot be exactly known, but must be conjectured from the number of transactions that are likely to follow. In posting the ledger, proceed by the following directions.—First, look for the Dr. of the Journal post in the index, under the proper letter, and this directs you to the folio of the Ledger where the account is, if it be already opened; if not, you must allot a space for it, write the title, and enter it in the index. Then, enter the article on the left hand side of the account under the title, by writing the date on the margin, and the name of the creditor on the line, with the word *To* prefixed, and a short narration of the transaction annexed, and inserting the sum in the money column. Then turn to the account of the creditor of the journal post; then enter the item on the right-hand side, prefixing the word *By* to the name of the Dr. This being done, turn to the journal and mark on the margin the numbers of the folios to which the item is posted. The figures which point out the reference to the Dr. and Cr. folios in the ledger should be separated by a line; for example, if the Dr. entry is on the third folio, and the Cr. entry on the fifth, the reference is marked $\frac{3}{5}$. These figures show how far the posting is advanced, and are useful in comparing the books. An item in the ledger is generally comprehended in one line. The description should be as full as can be contained within that limit. If it cannot be described completely, the journal is referred to for further particulars. In complex posts, there can seldom be any description annexed to the single Dr. or Cr. The entry is generally *To Sundries* or *By Sundries.* When the space allotted for an account in the ledger is filled up, the account must be transferred to another folio: for this purpose write on both sides of the account, opposite where the sums will be placed when the account is added, *Transferred to fol.* ——, and insert the folio where the account is opened anew. Then, after writing the title of the *New Account*, and entering the new folio in the index, write on the Dr. *To Amount brought from folio* ——, and on the Cr. *By Amount brought from folio* ——, inserting on each side the folio where the account was first opened. The sums of an account transferred should be left blank till the books are compared, as an error in any of the entries will occasion an alteration in the sum. Errors which are discovered before the sums of accounts are cast up may be corrected by drawing a line lightly through them, so that the original writing may still be legible, by which it will be evident the books have not been vitiated for any fraudulent purpose. Or, if too small a sum be entered, a second entry may be made for the deficiency. If an item be omitted it must not be interlined, but posted, as soon as discovered, under the last item.

Having posted into the ledger all the items in the journal, before you close the accounts it is proper to make a Trial Balance, in order to test the accuracy of the posting. For this purpose add the Dr. side of every account, and place the sums on a sheet of paper ruled with money columns. Then treat the Cr. side in the same manner, and add the sums on the balance sheet. If the totals of both sides are equal, it is presumed that the books are right; if they differ, there is certainly some mistake. And as the total amount of the journal is equal to that of either of the sides of the ledger, it follows that if either of the sides agrees therewith, the error, if there be one, must be on the other. Or if neither of the sides agree with the amount of the journal, the difference between each of them and the journal will show how much of the error lies on either side—the knowledge of which frequently tends to shorten the labour of re-examining the books, as it may be necessary only to examine the posting of one side of the ledger. When both sides of the *trial balance* sheet agree, proceed to make the actual Balance. Prepare two sheets of paper ruled with money columns, in the form of Dr. and Cr.; write *Profit and Loss* as the title of the first, and *Balance* as the title of the second. Then, leaving the accounts of Stock and Profit and Loss open till the last, take the difference of every account in the following manner:—In the *Cash Account* enter the difference, which is the cash in hand on the Dr. side of the new Balance-sheet. In *Personal Accounts*, enter the difference, which is the debt owing to you, or by you, on the proper side of the Balance-sheet; that is, if the Dr. be greatest, enter the difference on the Dr. side; but if the Cr. be greatest, the contrary. In *Bills Recoverable*, enter the difference, which is the bills on hand, on the Dr. side of the Balance-sheet. In *Bills Payable*, enter the difference, which is the sum owing in accepted bills, on the Cr. side of the Balance-sheet. In *Goods* or other property, if the whole be on hand, enter the amount on the Dr. side of the Balance-sheet. If all be sold, and the Cr. side of the account be greatest, enter the difference, which is gain, to the Cr. side of the Profit and Loss Sheet; but if the Dr. side be greatest, the difference is loss, and is entered on the Dr. side. If part be on hand, enter the value of it (as estimated at cost or at the current prices) to the Dr. side of the Balance-sheet; and then ascertain the gain or loss on the part sold, which enter on the proper side of the Profit and Loss Sheet. In accounts of consignments, when no returns have been made, enter the amount which stands at the Dr. on the Dr. side of the Balance-sheet. If returns be made, and the account credited for the proceeds of the sales, enter the gain or loss on the Cr. or Dr. side of the Profit and Loss Sheet accordingly. In accounts subsidiary to Profit and Loss—such as charges, interest, commission, insurance, &c.—enter the difference on the proper side of the Profit and Loss Sheet. When you have, in this manner, collected all the *Balances*, add the Profit and Loss Sheet, including the sums which stand at that account in the ledger. The difference is the net gain or loss; to this add the difference of the Stock Account, and the sum exhibits your net stock or capital, and which will correspond with the difference of the Balance-sheet, if the books have been correctly posted, and the balances exactly collected. The Balance Account contains on the Dr. the cash on hand, the value of the goods or other property which belongs to you, and all debts to you. The Cr. contains the sums you owe in open accounts and in accepted bills. The difference of balance, therefore, exhibits your net capital at present. The Stock Account contained your effects and debts at the commencement of the books; therefore, the difference shows your net capital at that time; and when your profits are added, or losses subtracted from this sum, it will, of course, also show your net stock or capital. Hence, the proof of Book-keeping by Double Entry consists of two methods of ascertaining what you are worth: the one from a view of your present effects and debts; the other from your former Stock, allowance being made for your profits and losses; and both will correspond, if the books be correct.

The balance being struck, your next work is to close the books. The most regular is by inserting the following articles in the journal, and posting them in the usual manner to the ledger. (1st.) *Profit and Loss Dr. to Sundries for loss on the following accounts.* The particulars are taken from the Dr. of the Profit and Loss Sheet. (2nd.) *Sundries Dr. to Profit and Loss for gain on the following accounts.* The particulars are taken from the Cr. of the Profit and Loss Sheet. (3rd.) *Balance-account Dr. to Sundries* for debts and property belonging to me. (4th.) *Sundries Dr. to Balance-account for debts due by me.* The particulars of this and the former are taken from the respective sides of the Balance-sheet. (5th.) *Profit and Loss Dr. to Stock for net gain; or Stock Dr. to Profit and Loss for net Loss.* (6th.) *Balance Account Dr. to Stock for Net Stock.*

Invoice (Home Trade) is a note of the quantity and value of goods sold, which is delivered to the purchaser by the seller, along with the goods, or sent to him by post. When the account is a copy of goods sold at the time, the expression is *Bought of* Jones & Co.; but if it be for goods sold at a former period, make it *To* Jones & Co. *Dr.* When the goods are sold at one time, the place and date is written at the top of the account; if not, the different dates

are placed in the margin. When an account is to be settled, either by cash or bill, a receipt is granted at the foot, in which the manner of settling it is expressed. If a partial payment be made, it is placed under the account and subtracted. If several partial payments have been made, they are shortly extended, and their sum subtracted. In making out an account of goods formerly sold, it is sufficient to express only the date and sum of each invoice, and refer for particulars to the account which was sent with the goods at the time of purchase; this is called a general account. With propriety, the word Dr. should be annexed to the purchaser's name; but, out of courtesy, it is usual either to annex or prefix it to the seller's name, and sometimes it is omitted altogether. The following are examples:—

Manchester, 31 *October*, 1871.

Messrs. John Robinson & Co.

Bought of William Graham & Son.

	£	s.	d.
10 Bundles Water Twist No. 20	25	0	0
15 " " "	41	0	0
45 Bundles.	£66	0	0

Terms 2½ per Cent. Cash.

General Account and Acknowledgment.

Messrs. John Robinson. Dr.

To William Graham & Son.

1871.		£	s.	d.
Oct 31.	To amount of Invoice rendered	66	0	0

By Cash.

November 3/71.

William Graham & Son.

Invoice (Shipping Trade) is an account of goods sent abroad either in consequence of an order from the person to whom they are sent, and at his risk, or consigned to him for sale at the risk of the owner. The title or preamble contains the name of the vessel and of the master, place of destination, and the name of the person to whom the goods are sent, and at whose risk. An account is next given of the quantity and value of the goods, with the marks displayed on the margin. The charges of shipping are added to the cost of the goods, and if there is commission due for purchasing and shipping the goods, it is generally charged on this sum. If insurance be effected by the person who ships the goods, he charges a small allowance on the sum insured. Example:—

Book of Charges of Merchandise.—Some merchants kept a book of this kind. It is paged and designed to abbreviate the cash book. It contains particular charges on goods, and risks at sea, such as carriage, wharfage, cranage, freight, customs and shipping agents charges. It contains, in short, every item too small for entry in the cash book and too large for the petty cash book.

Bookkeeping.

INVOICE OF GOODS SHIPPED ON BOARD THE WALMER CASTLE, JOHN CAMPBELL, MASTER, FOR PORT AU PRINCE, ON ACCOUNT AND RISK OF MESSRS. GLASS & CO., THERE.

	£	s.	d.	£	s.	d.
5 Cases, containing each 5 doz. checked shirts, at 50s. per doz	62	10	0			
Cost of 5 cases, at 6s. each.	1	10	0			
				64	0	0
4 Bales, containing each 12 pieces negro blanketing, at 24s. per piece	57	12	0			
Canvas and rope	1	9	6			
				59	1	6
1 Bale, containing 10 pieces bleached Russia sheeting, at 75s. per piece	37	10	0			
Packing and canvas	0	8	9			
				37	18	9
2 Cases checked and striped Holland, as per Invoice enclosed	..	..		193	14	3
5 Boxes Negro Jackets	..	..		117	2	10
5 Bales Coarse Woollens, Slops, &c.	..	..		200	0	0
				691	17	4
Charges.						
Cartage, Lighterage, and Wharfage	3	17	6			
Bills of Lading and Shipping Charges	4	6	0			
Insurance on £770, at £6 6s. per Cent. Policy Commission, ½ per Cent.	54	11	2			
Commission on £700 os 10d. at 2½ per Cent	17	10	0			
				80	4	8
Due 10 November, '71				772	2	0

E. and O. E. March 31—October, 1871

William Graham & Son.

ACCOUNT SALE is an account of goods sold on commission, and drawn out by the agents to whom they were consigned to be sent to the owner of the goods. It contains the quantity and value of the goods sold, the charges on the sales, commission, &c. Example:—

Account sales of 200 pieces linen, per Rob Roy, on Account of Messrs. John Robinson & Co.

1871					s	d.	£	s.	d.	
Oct. 20.	100 pieces.	No. 1, 20 pieces	@		23	9	23	15	0	
		,, 2, 15 ,,			24	6	18	7	6	
		,, 3, 25 ,,			26	9	33	8	9	
		,, 4, 17 ,,			28	3	24	0	3	
		,, 5, 23 ,,			30	6	35	1	6	£134 13 0
		100 pieces.								
,, 30.	100 pieces.	No 6, 25 pieces	@		27	9	34	13	9	
		,, 7, 30 ,,			30	6	45	15	0	
		,, 8, 15 ,,			31	9	23	16	3	
		,, 9, 30 ,,			31	6	47	5	0	151 10 0
		200 pieces.								£286 3 0

Charges.

	£	s.	d.	
Freight and landing charges	£7	3	9	
Cartage and porterage at landing	0	16	10	
Wharfage and warehouse rent	0	15	6	
Insurance, postage, &c.	0	7	3	
Commission and guarantee, 5 per cent.	14	7	8	
				23 11 0
To Messrs. John Robinson & Co., for net proceeds				£262 12 0

Due 5th November
E. & O. E.
London, 12 November, 1871.
A. B.

Account Current contains all the transactions of a firm with one of its correspondents during a given time. These transactions are described from particulars obtained from the journal and subsidiary books, and where the collective term *sundries* occurs in the ledger every reference is supplied. On the Dr. side are all the debts owing by the correspondent, and on the Cr. the payments made by him or on his account. In calculating interest the usual method is to compute the interest first on the sums of the Dr. side and then Cr.

Account Current (Shipping Trade).

Interest at 5 per cent. Account made up to 30th June.

Dr. Thomas Tuarco, Giro, & Co., Cairo, in account current with
Wilson, Robinson, & Co., London.

1871.			Days.	£	s.	d.	£	s.	d.
Jan. 14	To amount of invoice for 50 bales grey sheeting per Pactolus, due	Jan. 31	750	46	4	8	2250	0	0
Feb. 8	To amount of invoice for 10 bales mule twist, per Peru, due	Feb 25	125	7	0	5	410	0	0
Mar. 10	To amount of invoice for 50 tons of copper bottoms, per Delta, due	Mar. 10	112	47	11	3	3100	0	0
Apr. 20	To amount of draft, at 60 days' sight, in favour of Peak, Glass, & Co., due	Apr. 20	71	3	17	9	400	0	0
June 30	To balance of interest to this date	—	—				21	1	4
				104	14	1			
							6181	1	4
June 30							331	1	4

Cr.

1871.			Days	£	s.	d.	£	s.	d.
Jan 28	By draft at 3 m/d on Papudopulo & Co, due	Jan 14	167	45	15	1	2000	0	0
Mar. 14	,, remittance in specie, per Swan, due	Mar 14	108	32	10	10	2200	0	0
Apr 10	,, draft at 60 day's sight on Richardson & Co. due	June 9	21	2	17	6	1000	0	0
May 19	,, amount of invoice of 20 bales of cotton, per Khedive, due	May 31	30	2	9	4	600	0	0
June 30	,, balance of interest	—	—	21	1	4			
							381	1	4
,,	,, balance of account to this date			104	14	1			
							6181	1	4

E. and O. E.

London, 30th June, 1871.
(Signed) Wilson, Robinson & Co.

Books and the Book Trade, *see* **Publishing**.

Boolgaika, certain varieties of the black blue-eared spring, grown near the Sea of Azof, are called by this name.

Booloo, the name for gum or pitch in the Pacific islands.

Boorjooke, glass beads used in Abyssinia as small money.

Boorka, Circassian felt.

Boossat, rug or carpet in Arabic.

Bootee, a kind of Dacca muslin, white and spotted, but produced only in small quantities.

Booza, beer in Arabic.

Boquin, a coarse kind of baize made in Spain.

Borax [Ger., Da., Sw., Fr., and Latin, *Borax*. Du. *Borax*. It. *Borrace*, *Borace*, Sp. and Port. *Borrax*, Rus *Bura*, *Boraks*, Pol. *Boraks*], is used as a flux for metals, and enters into the composition of some of the coloured glass pastes made in imitation of gems; but its greatest use is to facilitate the soldering of the more precious metals. It is employed also as a flux by mineralogists in assaying the properties of minerals by the blow pipe. It is brought to us from the East Indies, in great masses, composed partly of large crystals, but chiefly of smaller ones, partly white and partly green, joined together by a greasy yellow substance intermingled with sand, small stones, and other impurities. The purer crystals, exposed to the fire, melt into a glassy kind of substance (of somewhat more than half their former weight), which is, nevertheless, soluble in water. The rough or native *borax*, called by the Arabians *tincar* or *tincal*, which signifies a kind of nitre used for soldering gold, should be chosen in firm and solid pieces of a greenish colour, fatty to the touch, and of the most rank smell.

Bordadillo, a double-flowered taffety esteemed in Spain.

Bordat or **Bordetti**, a very narrow kind of stuff manufactured in several parts of Turkey.

Borsenhalle, an exchange hall on the Continent, where merchants meet to transact business.

Boshah, a silk hankerchief made in Bagdad.

Bosphorus, in geography, a narrow strait or arm of the sea. The word is principally applied to two places, viz., the *Bosphorus* of Thrace, now usually called the straits of Constantinople; and the Cimmerian or Scythian *Bosphorus*, now called the straits of Kapha or Kiderlen.

Botarga, a substance made at Tunis from the spawn of a fish found on the coasts of the Mediterranean, not unlike a mullet.

Bottles [Ger. *Bouteillen*, Du. *Bottels*, Da. and Sw. *Bouteilles*, Fr. *Bouteilles*], *see* **Glass**.

Bottom, in navigation, is used to denote as well the channel of rivers and harbours, as the body or hull of a ship: thus in the former sense, we say a gravelly bottom, clayey bottom, sandy bottom, &c.; and in the latter sense, alluding to the State in whose service the vessel is, a British bottom, a Danish bottom, a Dutch bottom, &c. By statute, certain commodities imported in foreign bottoms pay a duty, called petty customs, over and above what they are liable to if imported in British bottoms.

Bottomry, a marine contract, for the borrowing of money upon the keel or bottom of a ship: that is, when the master of a ship binds the ship itself, that if the money be not paid by the time appointed, the creditor shall have the ship. "The instrument by which this is effected is sometimes in the shape of a deed poll, and is then called a bottomry bill, sometimes in that of a bond; but whatever be its form, the contract should be clearly set out in it. Bills of exchange drawn by the master on the owner, though accompanied with a verbal engagement that the ship shall be liable, cannot be considered instruments of hypothecation."

Bourbon, also called **Isle de la Reunion**, an island in the Indian Ocean, 440 miles E. from Madagascar, and 90 miles S.W. from Mauritius. Situated between 20° 50' and 28° 24' S. lat. *Area* about 900 sq. miles; *pop.* estimated at 209,000. Chief town and port, St. Denis. The island consists of two volcanic mountains of unequal height. The interior consists mainly of a volcanic desert, the surface of which has been pulverised in a degree by exposure to the atmosphere; but the natural soil is fertile, the air is pure and serene, and the climate temperate. *Inhabitants* are divided into three classes. 1st, the creole of French birth and parentage; 2nd, the colonial creoles; 3rd, the immigrants. The first class consists of the government officials, planters, and some few merchants and tradesmen. Of the latter sub-division of this class it may be said that the traditions of the slavery times are still so fresh in the land that it is with much difficulty they reconcile themselves to pay for labour in a money wage, The result of which is that there is no sympathy between the employers and employed. The second class, the coloured creoles, far the most numerous, also retain a vivid recollection of slavery. They decline all agricultural labour as derogatory to their dignity, and plead that it would again reduce them to the degraded state from which they have happily emerged. Those who do work confine themselves to handicrafts, fishing and similiar labour. The immigrant population consists of British Indian coolies, of Malgaches, natives of Madagascar, of Annamites, from Cochin-China, and what are called Caffres, natives of the Mozambique coast. The whole wealth of the island depends upon their labour. Their position, however, is most unenviable; they are severely tasked, and are often defrauded of their hardly-earned wages. *Industry and commerce* of the colony being altogether agricultural, the import trade, which mainly consists in provisions and articles for local consumption, has been much affected by the calamities, climatic and others, which have of late years befallen the plantations of the interior. The total value of colonial produce exported in 1868 amounted to 21,172,822 francs or £847,913, and consisted of sugar, coffee, vanilla, cloves, potatoes, vegetable fibre, sacking, hides, the balance being made up of small articles, as drugs, vegetables, &c. Of the sugar, France took 30,000 tons, and Australia 7,000 tons; the rest was divided between India and other countries, Great Britain taking none. The value of imported goods during the same period amounted to 26,678,600 francs or £1,067,144; they consisted of rice, cotton, linen, and woollen goods, wines and spirits, oils, salt, wheat and flour, cattle, guano, coal, haberdashery, iron wares, vegetables, and fish. Besides sugar, coffee, and vanilla, a vast quantity of maize is grown in the colony, more than suffices for local wants. The export of grain is, however, forbidden. Potatoes, of good quality and in considerable quantities, are grown in the high lands, and find a ready sale at remunerative prices at Mauritius. Tobacco of good quality is also grown in sufficient quantity for the local consumption. The trade in vegetable fibres is increasing in importance. One manufacturer turns out about 10,000 kilos monthly of the fibre of aloes, which is exported to France, where it is used for making hats, paper, cordage, stair-coverings, matting, &c. According to quality, the fibre of aloes fetches from 8*d.* to 10*d.* per kilo (4*d.* to 5*d.* a pound). The process of fabrication is simple and inexpensive, the machinery consisting of an engine of 4-horse power, moving a pair of cylinders or a system of beaters and stampers. Close at hand are the reservoirs of metal or masonry which are used for washing or soaking. The leaf, cut green, is passed between the cylinders or under the stampers, by which means it is crushed without destroying the fibre, after which it is left to soak for six or eight hours, at the end of which time the separation of the various elements has taken place. Thirty leaves of aloes, two yards long each, return on an average 1 kilo of fibre. It is packed at St. Denis in hanks and pressed in sacks. About 600 kilos go to the ton. *Shipping*, 1868, entered 238 French vessels, 83,024 tons; 23 foreign vessels, 8,254 tons. *Money Weights and Measures* same as in France.

BOURSE, the money market or stock exchange of France.

BOW, *of a ship*, that part which begins at the loof, and, compassing the ends of the stern, finishes at the sternmost of the castle. That part upon the right-hand side of the stem, to a person on deck and looking forward is called the starboard bow, and on the left-hand side is called the larboard bow. *Bow within* is that part of the bow towards the wind when a ship is close hauled; and the other part is called the lee-bow. *Bow, on the*, an expression to denote the position of any object, as a ship, the land, &c., appearing in the direction of some particular part of the bow. If a ship is sailing directly towards the object, it is said to be right a head; if not, the object is said to be on the starboard or larboard, or on the weather lee-bow.

BOWER, the name of an anchor carried at the bow of a ship. There are generally two bowers called first and second, great and little, or best and small bower.

BOW-LINE, a rope fastened across the middle of the leech or perpendicular edge of the principal square sails by three or four subordinate parts called bridles, and leading forward towards the bow, whence it derives its name. It is always used when the wind is so unfavourable that the sails must be all traced sideways or close hauled to the wind; in this situation the bow-lines are employed to keep the weather or windward edges of the principal sails right forward and steady, without which they would be perpetually shivering, and rendered incapable of service. The bow-line is fastened by two, three, or four ropes like a crow's foot to as many parts of the sail; only the mizen bow-line is fastened to the lower end of the yard. This rope belongs to all sails, except the sprit-sail and sprit topsail. "Sharp the bow-line" is "haul it taut" or "pull it hard."

BOWSPRIT or BOLTSPRIT [Ger. *Bugspriet*, Sw. *Bogspröt*, Fr. *Beaupré*, It. *Buonpresso*, *Copresso*, Sp. *Bauprés*, Port. *Gurupes*, Du. *Boegspriet*, Da. *Bougspryd*], a kind of mast resting slope-wise on the head of the main stem, and having its lower end fastened to the partners of the foremast, and further supported by the fore-stay. It carries the sprit-sail, top-sail, and jackstaff.

[illegible] [illegible] the [illegible] silky fibre of

the sanseveira zeylanica, a liliacious plant which furnishes the natives of the East with the material of which they make bow-strings.

BOXWOOD [Ger. *Buchsbaum*, Du. *Palmhout*, Da. and Sw. *Buxbom*, Fr. *Buis*, It. *Busso*, *Bosso*, *Bosso*, *lo*, Sp. *Box*, Port. *Bucho*, *Buxo*, Rus. *Jamschit Selenisa*, Pol. *Bukszpan*], is yellowish, hard, solid, even, very heavy, and takes a good polish. It is used in works of sculpture and in musical instruments, such as violins, hautboys, flutes, flageolets, &c., also in combs, boxes, pullies, &c.

BOYA, a term for a rich lode, used by the Spanish miners.

BRAACK, an official establishment in Russia, where the quality of flax and other imports and exports is certified.

BRAACKERS, the inspectors in Russia who certify the quality of flax and other articles.

BRACE, in writing, a term used to signify a crooked line, thus } made at the end of two or more articles in an account, the amount of which is usually placed in the centre of the brace. It is used also in printing, to enclose an entire passage, as a triplet in poetry.

BRACES, are ropes belonging to all the yards of a ship, except the mizen, two to each yard, reeved through blocks that are fastened to pennants, seized to the yard-arms. Their use is either to square or transverse the yards.

BRACKETS, *in a ship*, the small knees, serving to support the galleries, and commonly carved. Also, the timbers that support the gratings in the head are called brackets.

BRAID, a kind of trimming used by dressmakers and tailors. It is plaited, twisted, or woven.

BRAIL or BRAILS, in a ship, are small ropes made use of to furl the sails across; they belong only to the two courses, and the mizen-sail.

BRAISE, the French term for small coal.

BRAN, the thin skins or husks of corn, especially of wheat, ground, and separated from the corn by a sieve or boulter. It is of wheat-bran that starch-makers make their starch. The dyers reckon bran among the non-colouring drugs, and use it for making what they call the sour waters, with which they prepare the dyes.

BRANDY [Ger. *Branntwein*, Fr. *Eau de vie*, It. *Acquarzente*, Sp. *Aguardiente*, Port. *Aguardente*, Rus. *Wine*], a spirituous and inflammable liquor, extracted from wines and other liquors, and likewise from the husks of grapes by distillation. Brandy is naturally clear and colourless as water. The different shades of colour which it has in commerce arise partly from the casks in which it is kept, but chiefly from the addition of burnt sugar and other colouring matter that is intentionally added by the manufacturer. The great brandy stores are those of Tonnay-Charente; their proprietors have acquired immense wealth, and the mercantile fame of some is world-wide. There are at Cognac about [illegible] first-class firms; they are very large establishments, giving employment to a considerable number of men, as many as 300 in the larger class during the active season. There are also many establishments of lesser repute, but the system adopted by all is nearly similar. The brandies bought from farmers and distillers are, with a certain proportion of older brandies, carried by steam-lifts to the top or third storey of the mixing store, which forms the main part of the establishment. Here the brandies are, by means of troughs, poured into large vats placed on the next lower storey. For this purpose, six hogsheads of brandy, coming from different localities and of various ages (the new brandies greatly preponderating), are selected for each vat, and their contents are poured into the vat simultaneously, so as to secure a complete admixture. This method is continued with each vat employed until it is full. The extent of the business done may be estimated by the circumstance that in the active season usually 24 hogsheads are being poured out, or four vats being filled, at the same moment. The vats are made of oak, and capable of containing 60 hogsheads each. In the store referred to there are 28 of these vats, holding in the aggregate 107,840 gallons. The mixing in the vat is the next and a most important process; it is performed by vertical perforated flyers, formed somewhat like the screws of steam-vessels. These are placed inside the vats, and made to rotate by steam-power, so as thoroughly to mix and amalgamate the different brandies in the vat. As soon as the admixture is perfect, the brandy is allowed to descend through a pipe into a fit receptacle, and from thence it is forced upwards, by hydraulic pressure, through a thick filter, and thus becomes freed from all impurities. It is then received in another set of vats on the ground-floor, whence it is transferred to pipes, hogsheads, or quarters as required, and is marked with the name of the firm and the year of the operation; it is then ready for export or storage. The brandy thus prepared is known in commerce as the brandy of the year when the admixture was effected, its reputation depending partly on the brandies selected for mixture, partly also on the quality of the new brandies which preponderate, but mainly on the perfectness of the amalgamation. The storage of brandy is attended to with remarkable care. The oak barrels in which the brandy is deposited are specially selected, and are required to be of the best timber, as it is from them the old brandies derive their colour and excellence. The barrels, when filled, are placed in vaults, the flooring, walls, and roofs of which are of stone. The utmost efforts are made to maintain the temperature of those vaults cool and equable, but quite free from damp. It is only when those conditions are favourably developed that the brandies will constantly improve by keeping. In these brandy establishments, the making of casks and cases, the bottling of brandy, and other incidental works are also carried on.

Brandy exported from Tonnay-Charente.

Years ending 31st December.	Quantities.	
	French Litres.	British Gallons.
1864........	27,008,420	5,941,848
1865........	28,654,000	6,303,880
1866........	52,555,500	11,562,210
1867........	44,421,000	9,770,420
1868........	41,762,800	9,187,816
1869........	37,969,000	8,353,180

Brandy is also a valuable article of export from Bordeaux, Rochelle, Nantes, and Cette, and the principal customers are the British, the Americans, and the Dutch. Spanish brandy is very little used in this country, and is sent to the markets of Cuba, Mexico, and the South American States chiefly. The duty paid here on exports was formerly 22*s.* 6*d.*, which checked the demand, but since it was reduced to 10*s.* 5*d.* the trade has increased enormously. *Regulations as to importation, &c.* "Brandy, geneva, and other foreign spirits must be imported, if in casks, containing not less than 20 gallons, under penalty of forfeiture. They must be imported in ships of 50 tons burden or upwards, and are not to be exported from a bonded warehouse except in a vessel of like tonnage, under pain of forfeiture." The quantity entered for home consumption is estimated at about three million imperial gallons yearly, producing duty to the extent of about £1,700,000.

BRASILETTO, the worst kind of Brasil-wood.

BRASS [Ger. *Messing*, Du. *Messing*, *Missing*, *Geelkoper*, Da. and Sw. *Messing*, Fr. *Cuivre jaune*, *Laiton*, It. *Ottone*, Sp. *Laton Azofar*, Port. *Latao*, Rus. *Selenoi mjed*], is a factitious metal made of copper and zinc in proper proportions. It is of a beautiful yellow colour, more fusible than copper, and not so apt to tarnish. It is malleable and so ductile that it may be drawn out into wire. Its density is greater than the mean density of the two metals. Pure brass is not malleable unless when it is hot; for when it is cold it will break; and when it has been melted twice it will be no longer in a condition to bear the hammer at all; but in order to render it capable of being wrought lead is added, which renders it more soft and pliable. Sp. gr. 7·8 to 8·4. Mr. Whitaker, in his history of Manchester, supposes that when the Britons derived their iron and brass from the Continent, they purchased the latter at a cheaper rate than the former. Brass being thus cheaper than iron, they necessarily formed with it some domestic as well as some military implements. Be this as it may, the Britons had certainly brass foundries erected among them, and minted money and fabricated weapons of brass. In the year 1781, it is remarked in Anderson's "Origin of Commerce," that the copper and brass factories were so considerable in England as to employ upwards of 30,000 persons. Since that time the trade in this article has assumed enormous proportions; and Birmingham, the seat of this industry, exports brass as ornaments and utensils to all parts of the world.

Brauls, Indian cloths, with blue and white stripes.

Brazil, a country of vast extent, and one of the richest regions of the earth. It lies between 4° 17′ N., and 32° 35′ S. lat., 35° and 70° W. long. On the N. is Venezuela, French Guiana, and the Atlantic; S. and S.E., the Atlantic; W., the republics of Ecuador, Peru, Bolivia, and Paraguay. Its extent of coast along the Atlantic is upwards of 4,000 miles, and its area is estimated at nearly 3,000,000 sq. miles. It is divided into 20 provinces, the area and population of which may be seen from the subjoined table:—

Provinces.	Area.	Population.	
	Geographical Sq. Miles.	Free.	Slave.
Minas Geraes	11,413	1,150,000	300,000
Rio Janeiro ..	860	1,070,000	400,000
Bahia	6,091	1,100,000	300,000
Pernambuco ..	2,908	1,100,000	250,000
San Paulo	8,050	750,000	85,000
Ceara	1,736	525,000	25,000
Maranhao	6,759	320,000	65,000
Parahyba	1,138	250,000	30,000
Para	54,507	290,000	30,000
Alagoas	530	250,000	50,000
Rio Grande do Sul	4,059	340,000	80,000
Rio Grande do Norte	802	210,000	20,000
Sergipe	528	220,000	55,000
Goyaz........	13,594	135,000	15,000
Piauhy	4,597	210,000	22,000
Santa Catharina	694	125,000	15,000
Matto Grosso	28,716	95,000	5,000
Parana	—	80,000	10,000
Espirito Santo	643	50,000	15,000
Amazonas	—	69,000	1,000
Total	147,625 Eng Sq. Miles. 3,100,104	8,184,000	1,674,000
		9,858,000	

Revenue (1869), 160,434,406 milreis = £18,048,871. *Expenditure*, 156,837,345 milreis = £17,644,201. *Public debt* (1870).—

	Milreis.
Foreign Debt	113,606,445
Internal Funded Debt of 4, 5, and 6 per cent. on 31st March, 1870	240,246,800
Paper Money and Government Notes in Circulation at the end of April, 1870	150,397,608
Treasury Acceptances on 30th April, 1870	53,863,800
Debt due to Orphan Fund on 30th June, 1869	10,776,495
Deposits of Saving Banks, and divers other items	12,432,262
Total of Debt .... Milreis	581,321,430
£	65,398,686
Total Debt on 31st Dec., 1866	£42,883,869

Ports, Para, Maranham, Paraiba, Pernambuco, Maceio, Bahia, Rio de Janeiro, Santos and Rio Grande. Rio de Janeiro, *pop.* 200,000, is the seat of more than one-half the foreign commerce. It is on the west of a beautiful bay, forming a magnificent natural harbour. Besides its foreign trade, it has an extensive inland traffic, being the port through which supplies pass to the great mining district; and whence the produce received in return for these supplies is exported. Maranham, *pop.* 30,000, has a good safe harbour, which is, however, difficult to enter. The exports are almost exclusively cotton, rice, and hides. Pernambuco, *pop.* 100,000, comprises three towns, built on sand-hills, surrounded by the sea and connected by bridges. *Exports*. Cotton, sugar, and hides Bahia, *pop.* 120,000, is situated in a capacious bay, with an excellent harbour. Exports, sugar, cotton, coffee, hides, tobacco, fancy woods, and drugs. *Commerce*. "The extremely circumscribed extent of her manufactured products on the one hand, and on the other the large amount of her coffee, sugar, cotton, and other tropical products, give Brasil a powerful motive to engage in, and the means of carrying on, an extensive commerce. Her commercial policy has always been characterized by considerable liberality. The duties on imports and exports have been mostly moderate, and have been imposed more for the sake of revenue than of protection."

Total Value of Imports and Exports for each year from 1865 to 1869.

Years.	Imports.		Exports.	
	Milreis.	£	Milreis.	£
1865	131,746,341	14,821,463	141,083,446	15,871,888
1866	137,766,842	15,498,770	157,087,558	17,672,350
1867	143,145,583	16,103,878	156,253,622	17,578,532
1868	140,556,802	15,812,640	185,270,067	20,842,882
1869	166,690,061	18,752,632	202,686,274	22,802,206

Shipping.—Number and tonnage of Brazilian and Foreign Vessels entered and cleared in each of years from 1865–66 to 1868–69.

Years.	Brazilian.		Foreign.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
ENTERED.						
1865–66	166	43,939	3,234	1,186,459	3,400	1,230,398
1866–67	282	51,065	3,215	1,247,471	3,497	1,298,536
1867–68	221	38,519	3,260	1,294,957	3,481	1,333,476
1868–69	—	—	—	—	3,594	1,386,825
CLEARED.						
1865–66	171	46,669	3,067	1,289,923	3,238	1,336,592
1866–67	237	55,124	3,228	1,413,383	3,465	1,468,507
1867–68	134	29,908	2,821	1,235,338	2,955	1,265,246
1868–69	—	—	—	—	3,122	1,407,009

Cap. Rio Janeiro. Comprised within the limits of this empire are nearly all the most valued productions of the earth. Viewed from the sea the country appears rugged and mountainous, but on a nearer approach its appearance is romantic and picturesque, clothed with the most luxuriant vegetation, its hills covered with thick woods, and its valleys with a verdure that never fades. Towards the interior the land rises by gentle gradations to the height of from 3,000 to 6,000 feet above the sea, and in these temperate regions European fruits and grain are raised in abundance, while the intermediate valleys are remarkably favourable to the production of sugar, coffee, and all kinds of tropical produce. *Products (minerals).* Chiefly gold, diamonds, iron, and salt. The diamonds are found principally in the provinces of Minas Geraes, Goyaz, and Matto Grosso. The chief gold district is in the neighbourhood of San Paulo and Villarica. The province of Rio Grande do Sul is peculiarly rich in iron ore, and the salt steppes are situated partly in Pernambuco and Bahia and in Matto Grosso. *(Vegetable.)* The most important in a commercial sense are sugar, cotton, and coffee, the production of which has increased enormously of late years. In this region, the northern, a great variety of drugs and dye-wood, rice, tobacco, hides, &c., are also produced. In the south the wealth of the country is derived from the hides and horns of wild cattle. Very little wheat is produced, on account of the indolence of the natives. The country is, therefore, dependent for its supplies of flour on the United States. The tea plant has been tried, and both soil and climate were found suitable, but its culture has made very little progress owing to the scarcity and high price of labour. The forests are of vast extent, and furnish almost every variety of useful and ornamental wood.

Money.—The Milreis; average rate of exchange, 2s. 3d. *Weights and Measures.* The libra=1·012 lb. avoird.; arroba=32·38 lb.; quintal=129·54 lb.; alquiere (of Rio) =1 imp. bushel; alquice or cantar=1·82 imp. gallon; Oitava=55·34 grains; canada=8·684 gallons.

Brazil-wood [Ger. *Brasilienholz*, Du. *Brasiliehout*, Sw. *Brasilia*, Fr. *Bois de Bresil*, It. *Legno del Brasil*, *Verzino*, Sp. *Brasil*, *Madera del Brasil*, Port. *Pao Brasil*, Rus. *Brasilskoe derewo*], is of a red colour, and very heavy. It is denominated variously according to the places whence it is bought. This wood must be chosen in thick pieces, close, sound, without any bark on it, and such as, upon splitting, if pale, becomes reddish, and, when chewed, has a saccharine taste. It is much used in turned work, and takes a good polish; but is chiefly used in dying. When the sulphuric acid is added slowly to a fresh watery decoction of Brazil-wood, a small quantity of red precipitate falls down, and the liquor becomes yellow. Nitric acid produces a similar change; but the liquor is orange. Most of the other acids produce red precipitates. The alkalies restore in part the colour of the liquor. The action of the solutions of tin and of alum is the most important. Alum gives a fine red precipitate in great abundance; and in this manner a fine crimson, lake, and carmine are sometimes prepared, which consist of alumina, united with the natural colour of the wood. Nitro-muriate of tin, added to the decoction, separates the whole of the colouring matter, which falls down in great abundance, united with the oxide of tin, and the liquor remains colourless. The colour of Brazil-wood, though very beautiful, is fugitive, and is readily darkened and rendered purple by alkalies, or by soap that contains an alkali.

Bread may be leavened or unleavened, or unfermented. Where leaven is not used, substances are employed in imitation of yeast, from which carbonic acid is disengaged in making the bread, distending the dough and making it vesicular and light; in the other flour, water, with perhaps the addition of salt, are alone employed. The bread of this country is made from wheaten flour, and is divided into two kinds, biscuit bread and loaf bread. The quantity of bread produced by the same weight of flour varies according to the goodness of the wheat, but wheat of a fair marketable quality ought to be converted into serviceable household flour at a reduction of one-fifth of its own weight, and bakers state that 280 lb. of good flour will make 92 4lb.-loaves. In the United Kingdom bread (excepting French or fancy bread) must be sold by weight under heavy penalties. As regards the use of bread in other countries Hassel says:—"The Chinese use little bread, and that little is generally of wheat flour. Cakes of wheat flour prepared on the girdle is a common article of diet amongst the races of Northern and Central India: further south, on the table-lands of the Peninsula, the natives of India use cakes made of the flour of the Indian corn; amongst the millets bread is made of the great millet, also of the spiked millet, and the very poor of the people use the hard raggy. Barley is occasionally used in the westward. Along the seaboard of all Southern Asia and eastwards into China boiled rice is the great article of diet, and it is only made with unfermented palm wine into the cakes known as hoppers"

Bremen, one of the Hanseatic republics on the Weser, by which it is intersected about 60 miles from its entrance into the North Sea, *pop.* 58,000, *area*, 67 square miles. The city of the same name is about seventy English miles distant from, and above thirty feet above, the North Sea. It is of considerable importance as the chief port of German emigration. *Manufs.* The principal are those of sugar, tobacco, and leather. In the preparation of snuff and cigars employment is found for a great number of hands There are numerous distilleries, weaving and bleaching factories, tanneries, and oil and candle works. *Trade* From its excellent situation on a navigable river, Bremen is one of the principal Continental ports for the transit and warehousing of foreign and German commodities It is the chief emporium of Hanover, Brunswick, Hesse, and other countries traversed by the Weser, and is a port at which upwards of 700 vessels arrive yearly. The charges on the buying, selling, and shipping of goods here are very moderate. The export duty is ⅓ per cent. ad val. on all merchandize shipped, and an import duty of ¾ per cent. on all foreign goods entered for sale. *Measures and Weights.* The ell of 2 feet=22·76 imp. inches, and 100 ells=63¼ imp yards. The ahm of 20 viertels, 45 stubchen or 180 quarts=31¾ imp. gall. The last of corn of 4 quarts, 40 scheffels, 160 viertels, or 640 spints=9·77 imp. quarters. 16 ounces=1 pound; 14 lb.=1 lispund; 116 lb.=1 centner; =127·44 lb. avoir. *Money.* The gold thaler is 3s. 4d. sterling. *Usance* of bills from Germany and Holland, 14 days' sight, and from France and England, 1 month after date. 8 days of grace allowed on all bills except these; 3 to 5 days after sight. *Bank.* The bank has a capital of 4,000,000 Bremen thalers, and a note circulation of about two million.

Brent, a provincial measure for milk = 12 gallons.

Brenta, an Italian liquid measure = 15¼ imp. gall. in Milan.

Bresicate, a kind of baize made in France.

Brewing, the manufacture of ale or beer. Both are obtained by fermentation from the malt of barley. The most profitable barley is the rath which is earliest ripe. The grain must be full, round, heavy, and sweet, and of uniform quality, not a mixture of old and new; it should have sweated and seasoned in the stack. Any grains are suitable that contain a large proportion of starch. This is converted, as the seeds begin to germinate, into a fermentable sugar, that resembles cane sugar, first passing through the stage in which the substance is called dextrine, and from this, by the action of diastase, which is generated in the chemical change, it becomes sugar. Malted barley yields only about 1 part in 500 of diastase, but this is sufficient to saccharify 2,000 parts of dry starch. This action of diastase takes place only below the boiling point of water; from 158° to 167° F. is found the most favourable temperature. By the fermentation of the sugar the alcoholic portion of the beer is obtained Thus it is explained why those grains which contain the largest quantity of starch are best adapted to the manufacture of beer. Malting is the germinating process in which the starch is converted into sugar. The grain is first subjected to the operation called steeping, which lasts for about forty hours. It is completed when the grain has absorbed so much water that it is fully swollen. The liquor is then drawn off, and the grain is left to drain for six hours. The next operation of the malting process is that termed couching. The grain is thrown upon a malt floor quite dry, but in the course of a day it begins to grow moist, and gives out a pleasant fruity smell. Germination begins by the shooting out of the fibrils of the young roots from the tip of every grain. The germination must now be checked, and the couching succeeded by the flooring operation, which is merely spreading the grain more thinly over the floor, and turning it over two or three times a day. Both processes occupy a period of two weeks in England and three in Scotland. The malt is then subjected to the last process, called kiln-drying, which lasts about two days. The grain has now acquired a pale amber or brown colour, is round, of a sweetish taste, and of an agreeable smell. The bulk is greater than that of the original barley, but the water gained in the steeping is all expelled, and a loss of weight is incurred, amounting to from 12 to 20 per cent., by waste and cleaning. The variety of colour is due to the greater or less degree of heat employed in the drying. These distinctions of colour continue through the brewing into the liquor produced, giving to them those peculiar properties which cause them to be distinguished as ale, beer, and porter. Ale is made from the palest malt; porter from the brownest, which is partially charred, and acquires a bitter taste. *The brewing process proper* consists of several different operations.

The first is the grinding or crushing of the malt to a coarse powder. This is done between rollers of case-hardened iron. The washing process follows. The crushed grain is shaken into large mash-tubs, containing water at a temperature of 160°. In these it is thoroughly stirred up, with no more water than is sufficient to completely soak the malt. After reposing a half-hour, more water is introduced, raising the whole to a temperature of 167°. After remaining two or three hours the sweet wort is drawn off into a lower vessel, called an under-back. Water is again added to the mash-tub, at a temperature of 94°, which is immediately reduced by the cool malt to 176°. This is drawn off and mixed with the first. The next process is boiling. This is done in large copper vessels, furnished with steam valves. Here the hops are intro-uced, and the boiling of the mixture goes on, ith frequent stirring, until the liquor is con-ntrated, the albumen or mucilage is coagued, and the glutinous matter is rendered soluble by combining with the tannin of the ps. The next process is straining of the rts. This is done by pouring them through stern, called a hop-back, which has a me-lic bottom, full of small holes. The cooling cess follows, and the liquor, now called e, is brought to the temperature of 56° to It is then passed into the fermenting bs, huge wooden vats, strongly hooped and se, with the exception of a hole through ich the process may be inspected. Yeast now added, sometimes previously mixed th a quantity of the wort, in which fermention has already commenced. One gallon of yeast is usually sufficient to set 100 gallons of wort into fermentation. The fermenting is continued in England from 24 to 36 hours, and in Scotland, at a slower rate, from 6 to 12 days. The head of froth is finally beaten down, and mixed with the wort before all the sugar is converted into alcohol; and, in order to anticipate the acetous fermentation which would soon ensue, as also to retain the alcohol, the aroma of the hop and the carbonic acid in solution, the beer is drawn off into large casks or "rounds," in which it is purified, and afterwards transferred to the great store vats, whence it goes out to the consumer. *Regulations.* Brewers are required to take out a licence from the excise, and to "enter" their premises, under a penalty of £200 and forfeiture of the mash-tun and materials. *Rate of duty per annum.* Brewers of black or spruce beer, 10s. 6d. to £78 15s. Other beer, up to 20 barrels, 12s. 6d.; 20 to 50 barrels, 27s. 6d; 50 to 100, £2; 100 to 1,000 barrels, each 50, 15s.; 1,000 to 50,000, each 50, 14s.: exceeding 50,000, each 50, 13s. Brewers using sugar, 20s. Retail brewers, £5 10s. 3d. No security is required for the licence. Brewers are prohibited from having on their premises any raw or unmalted grain or corn, under forfeiture of the same, and a penalty of £200. The adulteration of beer is also prohibited, and druggists or others delivering, knowingly, any materials for the purposes of adulteration, are subject to a penalty of £500.

The following is an account of the number of common brewers paying for licences from the first day of October, 1868, to the 30th September, 1869:—

UNITED KINGDOM. Year ending 30th September, 1869.

Common brewers paying for licences.			Amount of licence duty charged on each class.			Supplementary charge.			Supplementary diminution.		
Over.	Under.	Number.									
Barrels.	Barrels.		£	s.	d.	£	s.	d.	£	s.	d.
—	1,000	27,722	80,774	0	0	16,198	12	6	7,547	15	0
1,000	10,000	1,776	84,680	4	0	12,307	5	0	5,876	2	0
10,000	20,000	204	40,642	16	0	3,475	19	0	1,823	14	0
20,000	30,000	63	21,905	16	0	2,092	6	0	318	0	0
30,000	50,000	42	22,045	2	0	2,207	14	0	1,169	8	6
50,000	100,000	29	26,276	0	0	1,785	13	0	750	16	0
100,000	150,000	8	12,378	17	6	1,457	10	0	176	5	0
150,000	200,000	3	6,653	17	6	398	5	6	904	7	6
200,000	250,000	1	3,100	17	6	—	—		—	—	
250,000	300,000	3	10,460	15	0	201	17	6	182	10	0
300,000	350,000	3	12,592	0	0	176	17	6	278	15	0
350,000	400,000	—	—	—		—	—		—	—	
400,000	450,000	1	5,450	17	6	261	5	0	—	—	
450,000	500,000	—	—	—		5,280	17	6	—	—	
500,000	550,000	1	6,407	15	0	—	—		—	—	
550,000	600,000	—	—	—		605	12	6	—	—	
600,000	—	2	16,667	7	6	528	2	6	643	15	0
Beginning at 12s. 6d.		4,474	—	—		—	—		—	—	
		34,332	354,332	10	6	47,477 19,671	17 8	6 0	19,671	8	0
Net supplementary charge........			27,806	9	6	27,806	9	6			
Total net sum paid by all classes			382,139	0	0						

BRICK-TEA is an article sold in China, composed of refuse tea-leaves and sweepings of granaries.

BRIMSTONE, *see* SULPHUR.

BRISTLES. The strong hair standing on the back of a hog; they are used chiefly in brush-making.

BROCADE [Ger. *Brokat*, Da. and Sw. *Brokade*, Du. and Fr. *Brocade*, Sp. and Port. *Brocado*], a stuff composed of gold, silver, or silk, raised and enriched with flowers, foliages, and other ornaments. Formerly the word signified only a stuff, woven all of gold both in the warp and in the weft, or all of silver, or of both mixed together; thence it passed to those of stuffs in which there was silk mixed, to raise and terminate the gold and silver flowers; but now all stuffs, and even taffeties or lustrings, if they are but adorned and worked with some flowers or other figures, are called brocades.

BROKERS are persons appointed to transact business between merchant and merchant, or merchants and bankers, or merchant and tradesmen, in matters of money and merchandise, for which they receive a stipulated commission. The number of brokers in London is unlimited, but by law they are to be licensed by the lord mayor and aldermen, under such restrictions and limitations for their honest and good behaviour as the court shall think fit. The fee on being admitted to act as a broker within the city of London is £5, and the penalty for acting without a licence £100. Some of the established regulations are, "That every person shall, upon his admission, take an oath duly and faithfully to execute and perform the office of broker between party and party in all things pertaining to the duty of the said office, without fraud or collusion, to the best and utmost of his skill and knowledge; that he shall in all cases reveal the name of his principal, and neither deal in goods on his own account, nor barter and sell again, nor make any gain in goods beyond the usual brokerage; and that he shall regularly register all the contracts, &c., into which he enters. Brokers grant a bond under a penalty of £500 for the faithful performance of the duties sworn to in the oath of admission."—*Macculloch*. A medal is delivered to the broker with his name engraved upon it, which he is required to produce as evidence of his qualification. Twelve persons professing the Jewish religion are permitted to act as brokers within the city under the same regulations. There are several kinds of brokers: exchange brokers, stock brokers, insurance brokers, ship brokers, and pawnbrokers. *Exchange brokers* are those persons whose business it is to negotiate the purchase and sale of bills of exchange; they procure money for bills on foreign merchants, which is termed drawing, and procure bills for those who have payments to make to their foreign correspondents, which is called remitting. A broker, by knowing the mutual wants of merchants, is a useful intermediate agent, a
his interest is that all transactions th
through his hands should be on a fai
ciple, the rate of exchange is generally
with more accuracy than it could be
merchants were to transact exchange bu
directly with one another: for being inte
in concealing their transactions from
other, they could never understand the
tion of the market so well. For his tim
trouble the broker receives a commiss
the rate of 2s. per cent. on the amount of
ness transacted. *Stock brokers* are emp
to purchase or sell stock or government
rities, and they are entitled to charge br
age on all public funds, except exchequer
and Indian bonds, 2s. 6d. per cent.; on
the brokerage is 1s. per cent. *Insur*
brokers. Their business is to insure ship
merchandise from the perils of the sea
while the shipowner or merchant looks to
broker for a selection of responsible u
writers, the underwriters expect from
frank disclosure of all the circum
affecting the risk; their remuneration is
cent on the premium and a discount fr
underwriters when accounts are settled.
brokers are employed in buying and
ships and cargoes, either by private co
or public sale; procuring freight, negoti
charter parties, and conducting shipping
ness generally. Their brokerage varies
2 to 5 per cent., according to the nature
transaction. *Custom-house brokers* are
rised to act as agents for importers a
porters of goods, shipowners, and o
They must be licensed by the commiss
of customs, who require from them a
with one security for £1,000, for the fa
conduct of the broker or his represen
Pawnbrokers. *See* under this heading.

BROKERS who distrain for debt, and
sons who are appraisers and dealers in
furniture, &c., are a very different cla
brokers from the commercial agents menti
above. Their conduct is regulated by 57
III., c. 93, which enacts that where a
distrains for rent for a sum not exceeding
he cannot take more than 16s. and stamp
levying, 3s.; man in possession, per day
advertisements, if any, 10s.; catalogues
commission, &c., in the pound on the net
duce, 1s.; stamp duty, lawful amount
appraisements, 6d. per pound on the val
the goods, whether by one broker or m
"under a penalty of treble the amount
money unlawfully taken, with costs, to
covered summarily before a justice of
peace."

BROWN HEMP is the commercial name
in Bombay to the fibres of the Hibiscus
nabinus. It is the Ambaree and Mest
Bengal, and the Palungoo of Madras,
also known as Indian hemp.

BRUMADUNDOO or COOROOKOO OIL
prickly poppy or Jamaica yellow
This pale yellow limped oil may be

uantities from the round corrugated
he prickly poppy, which was origi-
t into Mexico for ballast, but now
luxuriantly in all parts of India. It
nes expressed by the natives, and
lamps, but is adapted to other and
ortant uses

ts [Ger. *Bürsten*, Fr. *Brosses*, It.
nssole, Sp. *Broxas*, *Cepillos*, *Escobil-
Escovas*, Rus. *Schtschetki*] are made
' bristles, which are picked, combed,
nto lengths for the various kinds of
is clothes' brushes, shoe brushes, hat
&c.

IGHAMSHIRE, an inland county of
having N. the co. Northampton, E
Hertford, and Middlesex, S. Berks,
Oxford. *Area* 466,932 stat. acres.
of land, 5,548; average extent held
72 acres; average under crop of all
re, fallow, and grass, 398,342. *Under
ts.* Wheat, 57,155; barley or bere,
its, 24,252; rye, 327; beans, 17,334;
49; total, 137,459 in 1870, against
1869. *Green crops.* Potatoes, 1,861;
nd swedes, 22,566, mangold, 3,987;
109; cabbage, kohl rabi, and rape,
ches, lucerne, and other green crops,
otal in 1870, 35,837 acres, against
1869. Flax, 65, bare, fallow, or un-
arable land, 8,253; clover, sanfoin,
ses in rotation, 330,238; permanent
meadow or grass, not broken up, in
(exclusive of heath and mountain
,705 acres in 1870, against 187,744 in
w stock, 1870 Horses, 16,315; cattle,
heep, 305,103; pigs, 34,911. *Manufs.*
aw-plait, and thread lace.

ES [Ger. *Schnallen*, Fr. *Boucles*]
ifactured of silver, steel, brass, iron,
every description, at Birmingham.
are again coming into demand.

AM [Ger. *Schetter*, Fr. *Bougran*], a
arse cloth made of hemp, gummed,
d, and dyed several colours. It is
hose places of the lining of clothing
to be stiff and intended to keep their

HEAT [Ger. *Buchweizen*, Fr *Sar-
rasin*] is a native of Africa, but is so
t it will thrive in almost every soil
te. It grows to a great size; when ripe,
ep yellow colour, and yields a very
although the outer skin of the grain
h. It is raised most abundantly in
sia and the Himalaya. In the latter
he different varieties are grown at
levations, between 4,000 and 12,000
common variety grown in Britain
from 2 to 4 quarters per acre. Where
in America the yield is from 40 to
per acre.

AYRES, a city of South America,
pital of the province of the same
situated on the S.W. bank of the
ver, on a vast plain which extends
towards the Andes. *Pop.* 177,787.

It is irregularly arranged, its streets crossing at right angles, and mostly paved with granite. *Trade.* The principal goods imported are classified thus:—Provisions, drinkables, textile fabrics, articles used for shipping, ironmongery. These articles, the first two excepted, with tea, tin, coal, and beer, and ready-made clothes, form the chief imports from Great Britain; from France, wine, brandy, haberdashery, articles of dress, and refined sugar are sent. Spain supplying wine, salt, oil, and paper. Portugal, salt. Italy, oil, macaroni, wine, rice, and paper. Germany, cotton and woollen goods, rice, spirits, and ready-made furniture. Holland, sugar and gin. Brazil, yerba maté, sugar, spirits, and tobacco. Cuba, sugar and spirits. Chile sends cereals, and the United States kerosene and pine wood. One of the most important articles of commerce, after French and Spanish wines and cotton goods from England, is "Yerba Maté" from Brazil, and the Republic of Paraguay. This plant is of as general use amongst the native population of this portion of South America as tea is in England. *Imports from England.* The value of merchandize is estimated at nearly one million sterling annually. A remarkable increase has taken place in the trade in textile fabrics. Cotton goods take the lead, and following are woollen goods, calicoes, shirtings, &c., chintzes, mixed stuffs, linen goods, flaxen goods, and silk fabrics, the estimated value of which is £870,000. The articles next in importance are ironmongery for a value of £100,000; railway materials, £80,000; iron in bars, £50,000; ready-made clothes, £65,000; beer, exceeding 1,250,000 bottles, £40,000; and the sum total is made up by coals, saddlery, paints, haberdashery, and tea. That England is establishing a good market for herself may be gathered from the fact that in textile fabrics alone the increase since 1856 has been upwards of 200 per cent. *Exports.* Wools, washed and unwashed, hides and skins of different descriptions, grease, tallow, horsehair, ostrich feathers, cattle horns, bones, bone ash, and salted meat. The value of exports to England is about £500,000. Nearly all the wool is exported in an unwashed state, owing to the scarcity of labourers, and to a general deficiency of water, except in the immediate neighbourhood of the rivers, it would not repay the sheep farmers to send their wool washed. Buenos Ayrean wool, as compared to that of other countries, suffers under no slight disadvantage on account of the prevalence on the Argentine pastures of a small seed of the wild clover, called carretilla, which sticks in the fleeces of the sheep, and from which it is with difficulty eradicated. The machinery used in England for cleaning wool is not adapted to cope with this drawback, and that is one of the chief reasons why, comparatively speaking, so little Buenos Ayrean wool finds a place in the English market. A large amount of it, however, finds its way into England, imported from other countries, and made up in yarn. The export of hides, next to that of wool, forms the most important commerce of this country. Dry ox and cow hides are in greater demand than salted ones, whilst salted horse hides are preferred to the dry. The export of grease and tallow is the third article of importance, and is one that is augmenting considerably. A new branch of industry is springing up by the preservation of River Plate beef, adapted for consumption in the European market, the particulars of which are full of interest. *Meat curing for foreign markets.* The cattle of the River Plate were prized for their hides alone not long ago, the flesh being wasted or disposed of at nominal prices. Even now, first-rate meat is sold in the market at Buenos Ayres by the piece and not by weight, a leg of mutton costing from 10d. to 1s., and beef is comparatively cheaper. The number of horned cattle and sheep in the countries bordering the Plate is almost incredible. The total export of hides last year exceeded 2,500,000. If 12 per cent. is allowed for the amount slaughtered yearly, a stock of fully 22 million cattle would be given; and it would appear from calculations based on the amount of wool exported, that there must be at least 35,000,000 of sheep. The salted beef, well known under the name of "Charqui," is the staple food of the negroes, who display a great predilection for it in spite of its extremely untempting look, which has been the chief cause of the failure of all attempts to in[illegible] duce it into Europe. Mr. Williams, [illegible] a Saladerata of 30 years' experien[illegible] America, is inclined to ascri[illegible] England of this salted [illegible] ment rather than t[illegible] meat itself. Jerked [illegible] River Plate, ship[illegible] properly stowed [illegible] arrive in Europe [illegible] prove a cheap and [illegible] poorer classes. Its pre[illegible] simple. The meat is cut [illegible] of from one to two inches in [illegible], immersed in strong brine, and laid down in salt for two days, then it is ready for shipment in a wet state. If desired to be exported dry, the operation is completed in the open air, by exposing it to the sun from three to four days in summer, and from four to eight in winter. A great objection, however, to this class of meat is, that the greater portion of its nutritious qualities are carried away in the brine, and that the salt being applied externally, by the time it has penetrated to the centre of the slice the outward parts may be almost said to be destroyed by an excess of salt. Nevertheless, it must be admitted that the human frame will thrive on this aliment, as the stalwart figures of the males and the rounded forms of the female portion of the coloured population of the Brazils can testify. Three gentlemen of acknowledged scientific acquirements, Mr. John Morgan, of Dublin, Baron Liebig, of Munich, and Mr. Sloper, of London, have devoted considerable attention to the preservation of the River Plate meat. *Mr. M*[illegible] *system of preservation* is based on [illegible] filtration, and he has adopted the circ[illegible] system of the body as a means of intro[illegible] the brine into the tissues. The method is [illegible] demands but little labour, and no ex[illegible] machinery. The animal, if a sheep, i[illegible] by a blow on the head; if an ox, by th[illegible] tion of the point of a knife at the back [illegible] head, which severs the spinal cord and [illegible] instantaneous death. The chest is then [illegible] open and kept so by a cross piece of wood, [illegible] the heart is exposed. An incision is [illegible] the right ventricle and another in the [illegible] blood being allowed to escape; when [illegible] ceased flowing, a pipe with a stop-cock [illegible] duced into the incision on the left [illegible] the heart, and so into the arola or great [illegible] leading through the body, and is there [illegible] retained. The pipe is connected by a gut[illegible] percha flexible tube to a barrel containing the fluid to be injected, which is composed of water and salt (one gallon of brine to the cwt.) and a quarter to half a pound of nitre carefully refined, and fixed at an altitude of from [illegible] 20 feet. The briny fluid being let on, [illegible] out at the right side of the heart after trav[illegible] all the circulatory organs, cleaning the [illegible] and capillaries, and preparing the body for [illegible] second stage, which is performed by closing [illegible] incision in the right side of the heart with [illegible] sliding process, and thereby rendering [illegible] circulatory system perfect, with the ves[illegible] free and ready to receive the preservative [illegible] A few seconds suffice for brine to infuse the whole body, when, by cutting the ear or hoof of the animal, a stream of clear blue brine, untainted by a single particle of blood, will instantly be seen to flow. An ox can be preserved in ten minutes, the pressure of the injection being from 10 to 12 lb to the square inch, and from 12 to 14 gallons of the fluid are injected; of course, considerably less in a sheep. The superiority of the meat, as cured by Mr. Morgan's system, over that preserved by the external use of salt, consists in the retention of the natural juices and alimentary substances; and the elements of vegetables, as anti-scorbutics, can be artificially added to the flesh in the form of phosphoric acid mixed in the fluid to be injected. The meat, when cured, is packed in barrels, containing about 220 lb. each, and despatched for sale to Liverpool. *Liebig's process* differs essentially from that employed by Mr. Morgan, for the meat, instead of being preserved whole, is reduced to an essence, and can, consequently, only be used as soup or stock. Its strength can be estimated from the fact that 33 lb. of meat are reduced to 1 lb. of essence, which is sufficient to make broth for 128 men. Eight small tins will hold the concentrated elementary matter of an entire ox, at a price of 96s., and will [illegible] over 1,000 basins of soup. The process by which the essence of the meat is extracted [illegible] as follows:—The meat of the animal, after being killed, is allowed to cool for twenty-[illegible] hours; it is then placed in round iron rollers (armed inside with points), which, being revolved by steam reduce the meat to a pulp. This pulp is thrown into a large vat with water, and allowed to steam for an hour, and is then passed into a reservoir (shaped like a trough, with a sieve at the bottom), whence the liquid of the meat oozes into another vat, whence the fat is drawn off. The pure gravy is then put into open vats, supplied with steam pipes and with bellows on the surface, which produce a blast and carry off the steam, thus helping the evaporation and preventing condensation. Here it remains from six to eight hours, when it is passed into a filtering vat, and drawn off in the form of extract of meat; when cool it partially hardens, and is ready for packing in tins and exportation. *Sloper's process.* By this process the patentees profess to be able to preserve meat in its fresh raw state, which is to arrive in England or elsewhere in the exact condition as butcher's meat just killed, and be able to dispose of it at about 5*d.* per lb.; and that, moreover, when taken out of the air-tight tins in which it is to be packed, and on being exposed to the air, it will keep twice as long as ordinary butcher's meat. The curing process is simple, and is based on the destruction of oxygen from the vessel in which the meat is packed. All bone is extracted from the meat, but the fat is left. From the tins in which it is placed the air is exhausted by means of water forced in at the bottom, which, when it reaches the top, is allowed to redescend and run off, and the vacuum thus left is filled from above by a certain gas, the composition of which is kept a profound secret. The two holes at top and bottom are carefully soldered down, and the meat is then ready for exportation. The only risk it runs is from leakage, the smallest opening in the tin case proving destruction, by allowing the gas to escape and the air to get in. *Indebted for these details to Mr. Ford's report to the Foreign Office.*

Shipping.—The number of vessels that have arrived at and out from the port of Buenos Ayres has greatly augmented within the last few years. Upwards of 900 vessels, of a registered tonnage of 260,000, arrive annually, principally British, Italian, French, Spanish, and North American bottoms. *Port*, or more properly speaking the open roadstead, of Buenos Ayres is an exceedingly defective one. Vessels drawing over 18 feet of water are unable to enter the outer roads, whilst those drawing 11 feet of water only can pass into the inner ones. Added to the intricate sand banks in the river Plate, a great number of sunken wrecks and old anchors fill the harbour, and cause it to be one of the most dangerous that can possibly be conceived. Cargoes are discharged by means of lighters, which can only be used when the weather is fine. The consequence is that ships are often obliged to submit to very onerous delays before they are able to resume their journey. The shore, moreover, at Buenos Ayres is extremely shallow, and passengers from the different ships can only reach land when the water is low by going part of the way in small boats, and the rest in open carts, drawn by horses. *Port charges.* National deep-sea vessels pay 3 dols. per ton. Foreign vessels, not assimilated to national vessels, in virtue of existing treaties, 4 dols. per ton. CUSTOMS DUTIES. *Imports by water.* All articles not admitted free pay 15 per cent., except "Unset precious stones, gold and silver, worked or manufactured with or without precious stones, every instrument or utensil with handle or ornament of the same metals." These metals pay 6 per cent. of their value when that has been augmented one-third. Bullion, books, printing paper, agricultural implements, the furniture and tools of immigrants, &c., are admitted free. *Exports by land and water.* Cow and horse hides, salt beef, skins, clippings of all kinds, bones, tallow, ostrich feathers, tongues, oil, and grease; cattle, horses, and sheep pay 5 per cent.; all other productions are exported free. *Measures and Weights.* Same as Spain. *Money.* The integer of account is the current dollar, which is divided into 8 reals, each of 16 quartos or 34 maravedis. The circulating medium is paper money, which, having no specie basis, fluctuates often from 40 to 60 cents a day. The Spanish hard dollar is worth about 4*s.*

BUGLES [Ger. *Glasperlen, Glaskorallen*, Du. *Venetiaansse parlen*, Da. *Glaskoraller*, Sw. *Gläsparlor*, Fr *Verroterie, Rassade, Rocaille*, It. *Coutaria, Margheritine*, Sp. *Albalorios, Rocalla, Vidrieria*] are small glass beads of different colours, of which large quantities are exported to Africa, and there bartered on the coast for gums, ivory, gold dust, &c.

BUHRSTONE is a quartzose rock, containing cellules. It is as hard and as firm as a quartz crystal, and owes its peculiar value to this quality and the cellules, which give it a very rough surface. Stones for grinding wheat and other kinds of grain are formed of this rock, and those which are most valued have the cavities about equal in span to the solid part. The best stones for this purpose come from France, and are obtained from the Paris basin and adjoining districts. When used for grinding, the stones are cut into wedge-shaped parallelopipeds, which are called panes; these are bound together by iron hoops into millstones. The Paris buhrstone is a tertiary formation. A buhrstone is obtained in Ohio in America, which is in part a true sandstone, and contains fossils. It also contains lime, and Mr. Dano suggests that the removal of this lime by solution may have given it its cellular character. It overlies the coal formation, and has an open cellular structure where quarried for millstones. The quartz rock of Washington, in the United States, is in some parts cellular, and makes good millstones. Buhrstone is also found in Georgia, near the Carolina line, and in Arkansas, near the Cove of Wichita.

Buke Muslin, a plain, clear, fine muslin made in Glasgow, and used for ladies' dresses.

Bull, a jobber on the stock exchange, who, buying stock low, has an interest in the rise of the market.

Bullion denotes gold and silver in the mass before it is coined or worked into any useful or ornamental form: these metals are so called either when smelted from the native ore and not perfectly refined, or when they are perfectly refined, but melted down in bars or ingots, or any unwrought body of any degree of fineness. [*See* Precious Metals.]

Bun Ochra, a weed common in most parts of India, abounds in a strong fibre, which is a tolerably fine substitute for wax. The Urena lobata abounds along the coast or province of Amherst, and affords a valuable hemp.

Bunting [Ger. *Flaggentuck*, Du. *Vlaggedoek*, Da. *Flagduck*, Sw. *Flaggduck*, Fr. *Etamine à pavillon*, It. *Stamina burato da bandiere*, Sp. *Lanilla*, Port. *Estamcuha*], linen cloth of which flags are made.

Bunt-lines are small lines made fast to the bottom of a ship's sails in the middle part of the bolt-rope, to a cringle, and so are received through a small block seized to the yard. Their use is to trice up the bunt of the sail for the better furling it.

Buoy, a short piece of wood or a close-hooped barrel fastened so as to float directly over the anchor, that the men who go in the boat to weigh the anchor may know where it lies. *Buoy* is also a piece of wood or cork, sometimes an empty cask, well closed, swimming on the surface of the water, and fastened to a large stone, piece of broken cannon, or the like, serving to mark the dangerous places near a coast, as rocks, shoals, wrecks of vessels, anchors, &c. *Stream the buoy* is to let the anchor fall while the ship has weigh. *To buoy up the cable* is to fasten some pieces of wood, barrels, &c., to the cable near the anchor, that the cable may not touch the ground in case it be foul or rocky; lest it should be fretted and cut, or worn off.

Burates, a thin material made of wool, used in Venezuela for veils.

Buratine, a species of Persian raw silk.

Buri, or **Buli**, the name of a Philippine palm, probably the Corypha gebanga of botanists, and the Gebang of the Malays and Javanese. The Philippines make much use of the several parts of this palm. From the leaves they make mats; from the sap, both sugar and a distilled spirit; from the pith, a sago; and from the seeds, rosaries; while the spines boiled in water yield a thread, from which a coarse cloth is woven, called sagorou.

Buteshire, a county of Scotland, composed of Arran, Bute, the Cumbrays, Holy Isle, Pladda, and Inchmarnoch, all in the Firth of Clyde. Area, 209,375 stat. acres; occupiers of land, 489; average extent held by each, 44 acres; average under crop of all kinds, bare, fallow, and grass, 21,583. *Under corn crops.* Wheat, 368; barley or bere, 287; oats, 4,836; rye, 70; beans, 99; peas, 17; total 5,677 in 1870, against 5,454 in 1869. *Green crops.* Potatoes, 1,450; turnips and swedes, 1,580; mangold, 5; vetches, 31; total under green crops, 3,066 in 1870, against 2,734 in 1869. Bare fallow and uncropped arable land, 438; clover, sanfoin, and grasses in rotation, 6,357; permanent pastures, meadow or grass, not broken up in rotation (exclusive of heath or mountain land), 5,845 acres in 1870, against 9,699 in 1869. *Live stock*, 1870. Horses, 945; cattle, 7,351; sheep, 39,515; pigs, 850.

Butter [Fr. *Beurre*, Ger. *Butter*, Da. *Smor*, Du. *Boter*, It. *Burro*, Sp. *Manteca*, Rus. *Masslo Korowe*], an oily compound, forming one of the components of milk, the others being curd or caseine, a species of sugar, and certain salts. The lighter matters suspended in milk separate in the form of cream, which can be separated by churning into butter and butter-milk. The yield of cream is increased by dropping into the milk a small piece of zinc. Butter is naturally of a yellow colour, which is deepened when the cows feed in rich pastures, but it is often artificially heightened by annatto. The butters in the highest repute are those of Aylesbury, Dorset, and Devonshire. Somersetshire and Gloucestershire butter is excellent, and that of the Welsh mountains and Scotch moors, when properly made, is very good, and in some cases equal to the best Buckinghamshire. Large quantities of Irish butter are sold in England, but it is regarded as very much inferior to the other butters in the market. Macculloch says that "the salt butter of Holland, when unadulterated, is superior to that of every other country; and large quantities of it are annually exported. It forms about one-third of all the foreign butters we import, the rest being brought from France, Germany, Belgium, &c. Latterly, the supplies of Ostend butter have materially increased, the qualities ranging from the very best, which is occasionally sold for Aylesbury, to the very worst description, or imitation butters. It is generally imported in long boxes, containing about one cwt. each. The production and consumption in Great Britain are very great. The consumption in the metropolis may, it is believed, be estimated at about 6 lb. a year for each individual; and supposing this estimate to be nearly accurate, the total annual consumption would, on this hypothesis, be 25,600,000 lb., or 11,428 tons; but to this may be added 3,000 tons for the butter required for the victualling of ships and other purposes; making the total consumption, in round numbers, 14,248 tons, or 32,320,000 lb., which at 1*s.* per pound would be worth £1,616,000." The value of the consumption in London now cannot be short of £2,000,000.

Buttock of a ship is that part of her which is her breadth right astern from the tuck upwards; and a ship is said to have a broad or narrow buttock according as she is built broad or narrow at the transom.

Buttons [Fr. *Boutons*, Ger. *Knöpfe*, It. *Bottoni*, Sp. *Botones*, Port. *Botoens*, Rus. *Pugowizü*] are made from metal, shell, horn, bone, palm seeds, fruits, woods, glass, wire, mother of pearl, jet, precious stones, linen, velvet, satin, florentine, and embroidered stuffs of all kinds. Birmingham is the great seat of this manufacture. Those of metal are often gilt, and fine grains of gold, and sometimes 2½ grains are made to cover 144 one-inch buttons, so great is the divisibility of the precious metal.

Byssus Asbestinus, a species of asbestos or incombustible flax, composed of flexible parallel fibres.

C

Caballine Oil [Ger. *Kammfet*, Fr. *Huile de Cheval*], melted horse-grease.

Cabeca, or **Cabesse**, a name given to the finest silks in the East Indies; and those from 15 to 20 per cent. inferior are called *barina*.

Cabeer, a money of account at Mocha, 80 of which are worth about 2*s.* 6*d.*

Cabidos, or **Cavidos**, a long measure used in Goa and other Portuguese settlements in the East to measure stuffs, linens, &c., and equal to three-quarters of a yard.

Cable, the great rope of a ship to which the anchor is fastened. There is no ship, however small, but should have at least three cables; namely, the chief cable or cable of the sheet anchor, a common cable, and a smaller one. Cable is a name also given to a rope which serves to raise heavy loads by means of a crane, pulley, and other tackle. It is usually applied to ropes of at least three inches in circumference. Formerly cables were made of hemp; now they consist, almost all of them, of iron chains, as being less likely to be destroyed on a rocky bottom. All vessels under 150 tons require to have 150 fathoms of chain; above 150 and under 250 tons, 180 fathoms; above 250 and under 350 tons, 200 fathoms; above 350 and under 500 tons, 240 fathoms; above 500 and under 700 tons, 270 fathoms; 700 and upwards, 300 fathoms. In Southern Asia some cables for ships are made of Coir or Cayar, the requisite quantity being laid out at full length on the beach or some convenient spot. They are made up in strands, and twisted in a very simple machine: viz., a strong wooden frame in a strong board, across which three or four pins are placed, and turned like the screws in a carpenter's bench by as many men; the further end of the cable is fixed to a large revolving pin, which is turned round in a similar manner. As the strands are twisted, the horse in which this is fixed is drawn nearer to the other.

Cabotage, a term in navigation, which implies skill in distinguishing the proper places to anchor at, and avoiding banks and observing the course of the tides and currents along the sea-coasts.

Cacao, or **Cocoa**, the chocolate nuts or seeds termed cacao are the fruit of an evergreen tree, native of the western continent of America. The seeds, being nourishing and agreeable, are kept, in the majority of houses in America, as part of the pantry stock. By pressure they yield a fatty oil called butter of cacao. The common cocoa of the shops, says Dr. Ure, consists generally of the roasted beans, and sometimes of the roasted integuments of the beans, ground to powder. The consumption of this article in the United Kingdom is estimated at three millions of pounds annually, yielding a revenue of £75,500. "The cacao beans lie in a fruit not unlike a cucumber, about five inches long, and three and a half inches thick, which contains from twenty to thirty beans, arranged in five regular rows, with partitions between, and which are surrounded by a rose-coloured, spongy substance, like that of water-melons." The beans, when separated from the pulp and dried in the sun, are ready for the market; but in some countries they are placed in large tubs, and covered, for the purpose of undergoing a slight fermentation, by which they lose some moisture and a portion of their bitter, acrid qualities. While fermenting, they are regularly stirred every morning. The same object is attained, in Mexico and elsewhere, by burying the beans in pits in the earth. They are finally sun-dried, and are then ready for sale. They are prepared for use by roasting, in the same way as coffee is roasted. When the aroma is well developed, the beans are turned out into shallow wooden vessels, and stirred till cool. Those which have been fermented lose their shells readily, and split open into regular lobes, like split beans. The shells, amounting to about 12 per cent. of the entire weight, are separated by winnowing, and form an inferior quality of cocoa, known as shells. Their average composition is estimated as follows:—Water, 5 per cent.; starch, gum, &c., 22; gluten, &c., 20; oil (cocoa butter), 57; theobromine, 2. The theobromine is a white crystalizable substance, similar to the theine in tea, but contains more nitrogen. The finest American cacao is that of Socowusco, but the principal exports are from Caracas and Guayaquil.

Caracas Cocoa.—The exports of cocoa from Venezuela during thirty years—viz., from 1701 to 1730 inclusive—amounted to 643,215 fanegas (the fanega consisting of 110 lb.); in the following eighteen years (up to 1748) to 869,247 fanegas; and in the fifteen years following (up to 1763) to 887,191 fanegas; the first period giving 21,440, the second 48,291, and the third 55,449 fanegas as the annual average; the exportation last alluded to having been thus divided:—To Spain, 503,721 fanegas; Canary Islands, 76,141 fanegas; Vera Cruz, 279,074 fanegas; and Santo Domingo, Puerto Rico, and Havana, 28,255 fanegas. Total, 887,191.

In the year 1728 the Dutch sold the cocoa which they imported into Spain at from 70 to 80 dollars per fanega, while the price in Caracas at that period was from 7 to 10 dollars; whilst the Guipuzcuanian Trading Company, which was established in the same year (1728), sold their cocoa in Spain for from 45 to 52 dollars, having, after the war of 1738, lowered the price to 30 dollars, which was the highest price they ever paid for cocoa up to the year 1765. In 1730 the produce of the 759 cocoa estates which then existed in Venezuela was calculated at 60,000 fanegas annually; and in the year 1765 it was computed to have attained the amount of 130,000 fanegas annually. From the year 1770 to 1774, the Guipuzcuanian Trading Company declared its total exports of cocoa from the provinces of Caracas and Maracaibo to Spain to amount to 179,156 fanegas, giving a yearly average of 35,831 fanegas. Lizarraga, a Bizcayan planter of the neighbourhood of Caracas, writing in the year 1830 on behalf of the agriculturists of the country, estimated the former annual yield of cocoa of the whole of the Republic of Venezuela at about 150,000 fanegas, which, at the medium price at the time of 20 dollars per fanega, amounted in value to 3,000,000 dollars; but, at the date of his writing, he calculated the yield at but 75,000 fanegas. At the present time, the Trinitario seed is the staple of the cocoa from the districts of Guiria, Maturia, Carupano, and down the eastern coast as far as the Rio Chica: but the native or genuine "creole" plant is still cultivated upon some few estates. The Trinitario seed is also sown to some extent in the valleys of the Tuy, although the majority of the estates are sown with "creole" seed. From the Port of La Guayra, running westwards towards Puerto Cabello, and particularly at Choroni, Ocumare, Turiamo, Patanemo, and Borburato, lie the districts where the best Venezuelan cocoa is now produced, and the best of all at an estate called Chuao, near Choroni, the property of the University of Caracas. From the neighbourhood of San Felipe, the capital of the state of Yaracuy, a very superior unmixed cocoa is sent to Puerto Cabello, to the amount, including a small quantity from Barquisincto, of about 4,000 to 6,000 fanegas annually. Trinidad seed has, since 1854, been introduced into Chichiwiche, formerly one of the finest cocoa districts on the western coast. The yearly crop of cocoa throughout the Republic is estimated at from 70,000 to 80,000 fanegas. These interesting particulars are from Consul General Middleton's report.

CACHALST, a large fish of the whale species, from the brain of which spermaceti is extracted.

CADE, a cag, cask, or barrel. A cade of herrings is a vessel containing 500 red herrings, or of sprats 1,000.

CADDAS are ribbons manufactured of silk and worsted.

CADENE, a common coarse kind of carpeting made in the Levant.

CAITHNESS, a maritime county of Scotland, occupying its N.E. extremity, having W. Sutherland, and N.E. and S. the German Ocean. On the W. and S. the surface is mountainous; in other directions, flat or undulating. Wick and Thurso, its two towns, are the principal seats of the herring fishery. Limestone is abundant. Kelp and oats are exported. *Area*. 455,708. *Pop*. 44,187. Occupiers of land, 2,612; average extent of each holding, 38 acres; total acreage under all kinds of crop, bare, fallow, and grass, 100,226. *Under corn crops*. Wheat, 22; barley or bere, 1,737; oats, 32,635; rye, 46; beans, 1; peas, 36; total, 34,477. *Green crop*. Potatoes, 2,489; turnips and swedes, 12,874; cabbage, kohl rabi, and rape, 91; vetches, lucerne, and any other green crop (except clover or grass), 340. Total, 15,794. Flax, 3; bare, fallow, or uncropped arable land, 1,181; clover, sanfoin, and grasses in rotation, 27,646; permanent pasture, meadow, or grass (exclusive of heath or mountain land), 21,125. *Live stock*. Horses, 4,724; cattle, 19,731; sheep, 88,016; pigs, 1,774.

CALABAR SKINS [Fr. *Petitgris*, Ger. *Grauwerk*, It. *Vaor*, *Vajo*, Rus. *Bjelka*, Sp. *Grispequeno*] are the Siberian squirrel-skins of various colours used in making muffs, tippets, &c.

CALABASH is of two kinds, the long or Ceylon, and the round: they are good vegetables when young, and are useful when dry as vessels.

CALCEDONY, a species of agate of a uniform colour, generally of a milky white or pale yellow, often with an internal wavy structure. It is to be found in the Faroe Islands, Ireland, Great Britain, Cambay, &c.

CALCUTTA, the principal city of the presidency of Bengal, and seat of the Supreme Government. It is situate on the left bank of the Hoogly, a branch of the Ganges, distant by the river's course 100 miles from the sea. *Lat*. 22° 34′ 49″ N.; *Lon*. 88° 27′ 16″ E. *Pop*. 593,182, inclusive of the nightly residents of the suburbs. The city extends along the river bank from N. to S. about five miles, and its breadth from thence to the circular road measures about two miles, the entire site comprising an area of about nine miles. The European part of the city is studded with splendid edifices, but the native portion is most uninviting, on account of the dirt and foulness of the streets and the meanness of the habitations. The population is made up of Europeans, Eurasians (progeny of white fathers and native mothers), Americans, Chinese, Asiatics, Hindoos, and Mahomedans. The mean temperature at Calcutta is about 66° in January, 69° in February, 80° in March, 85° in April and May, 83° in June, 81° in July, 82° in August and September, 79° in October, 74° in November, and 66° in December. Possessing great natural advantages for inland navigation, all descriptions of foreign produce are transported with wonderful facility on the Ganges and its subsidiary streams to the North Western provinces of India. Through

Calcutta also passes all the produce of Bengal; the extent of which has increased enormously within the last few years. *Commerce.* The total value of imports and exports dutiable and free during the year 1868-9 was £51,182,095, against £49,082,281 in the preceding year, an increase of £2,099,813. The increase was chiefly in the free export trade, which increased no less than £1,627,810. Dutiable imports and dutiable exports increased to the extent of £962,683. In the value of free imports there was a decrease of £490,680, to which the decrease in machinery alone contributed more than £310,000. *Imports.* Below are shown the most important dutiable articles of import, and the extent to which they have either increased, or the reverse. Of free articles, there was a falling off in machinery, as already stated; in silver, to the value of £169,000; and in coal and coke, to the value of £54,000. The last fact is interesting, as showing the influence of the coal discoveries.

Imports.

	1868-9	Increase.
Salt	£650,882	£85,357
Piece Goods	9,604,610	405,920
Patent Metals	208,293	64,313
Wines	269,034	38,530
		Decrease.
Hardware and Ironmongery	904,746	796,504
Twist	1,200,423	79,481

Exports. There was a very large increase in the value of the free exports during the year 1868-9, as shown below, and a decrease in opium and cotton. Silk, too, though 20,798 cwt. were exported, against 14,637 cwt. in 1867-8, produced £1,303,593 only, or £167,268 less than in the previous year. Of dutiable articles, by far the largest increase (£845,814) was in indigo, of which the quantity exported was valued at £2,209,578. Rice and oil-seeds fell off £194,176 and £273,240 respectively. The value of the trade with America was £1,549,574, while that with Australia was rather more than half a million. The first represents an increase of £328,223; the second, a decrease of £113,614.

Exports

	1868-9.	Increase.
Jute	£1,880,023	£570,487
Hides and Skins	944,268	236,023
Tea	942,347	256,826
Sugar	249,310	199,287
Saltpetre	307,329	58,645
Silver	2,171,904	1,076,667
		Decrease.
Opium	6,085,697	322,940
Cotton	2,401,899	422,010

The articles enumerated do not include all the exports from Calcutta as Bengal produce, only those mentioned in the official reports for 1868-9. The export of coffee is limited. That of raw cotton, in 1865, was £2,152,739; and in 1866, £4,284,001. Spices were exported to the extent of £20,000; lac, £300,000; Cashmere shawls, £170,000; tobacco, £10,000; and jewellery, £13,000. *Export Tariff.* Indigo, rupees 3 per maund. Grain of all descriptions, 3 annas per maund. Lac—Button, dye, seed, shell, stick and other sorts, 4 per cent. on assessed value; oils, 3 per cent. on assessed value; seeds, 3 per cent.; shawls, 3 per cent. ad. val.; cotton goods, 3 per cent. assessed value; hides and spices, 3 per cent. *Import Tariff.* Yarns, 3½ per cent. assessed value; piece goods, 5 per cent.; drugs, dyes, fruits, glass-ware, gums, hides and skins, ivory, leather, manufactures, copper, naval stores, paints, provisions, seeds, shells, silk, spices, 7½ per cent.; ale, beer, and porter, 1 anna per imp. gall.; spirits, 3 rupees imp. gall.; iron manufactures, 1 per cent. *British Indian Money.* The standard is silver. 1 pie = ⅛*d.*; 3 pie = 1 pice = ⅜*d*; 4 pice or 12 pie = 1 anna = 1½*d.*; 16 annas = 1 rupee = 2*s.* 16 rupees = 1 gold mohur = 32*s.* *Weights and Measures.* Bazaar weight: 16 chittacks = 1 seer = 2 lb. 13 drs.; 40 seers = 1 maund, or 82 lb. 2 oz. 3 drs.; 40 bazaar maunds = 110 factory maunds; 1½ factory maund = 1 cwt. Factory weight: 16 chittacks = 1 seer, or 1lb. 13 oz. 14 drs.; 40 seers = 1 maund, or 74 lb. 10 oz. 11 drs. The Indian maund = 82 2-7ths lb.

Banks. The Agra Bank, Limited; Head Office, 35, Nicholas-lane, E.C. Bank of Bengal; Agents, Coutts and Co., Strand; and Bank of England. Chartered Bank of India; Head Office, Hatton-court, Threadneedle-street. Chartered Mercantile Bank; Head Office, 65, Old Broad-street. Comptoir d'Escomte de Paris; Branch, 144, Leadenhall-street. Oriental Bank; Head Office, Threadneedle-street. *Shipping.* Number and tonnage of all vessels entered and cleared in the foreign and coasting trades at ports in each presidency in each of the years ended 30th April, 1865 and 1866. *Entered:* 1865, vessels, 2,002; tons, 1,109,207. 1866, vessels, 1,501; tons, 875,831. *Cleared:* 1865, vessels, 1,923; tons, 1,010,529. 1866, vessels, 1,541; tons, 918,214.

CALICO [Fr. *Coton, Toile de Coton*, Ger. *Kattun*, It. *Tela bambagina, Tela di pinta*, Sp. *Tela de Algodon*, Da. *Kattun*, Du. *Katsen*, Sw. *Cattun*, Port. *Pano de Algodao*, Rus. *Wuboika*], white, plain, or printed cloth, so called from Calicut, on the Malabar, whence it was first imported. It is now exported from the United Kingdom to India.

CALICO PRINTING, the art of producing a coloured pattern on cloth by the application of colouring substances. Its origin is traced back to very remote antiquity, and, in some form or other, appears to be practised by nations of little skill in other respects. In India it has been known for ages. The large cotton chintz counterpanes, called *pallampoors*, which, from an early period, have been made in the East Indies, are prepared by placing on the cloth a pattern of wax, and dyeing the parts not so protected. From India the art was introduced into Europe, but it never became of much importance till some time in the 17th century, when Augsburg, in Bavaria, became celebrated for its printed cottons and linens. It spread afterwards to France, Germany, Switzerland, and Great Britain; being introduced into London in 1676. As the linen, woollen, and silk weavers were afraid that the use of calicoes would interfere with their own stuffs, they succeeded in getting a law passed prohibiting the wearing of calico, under a penalty of £5 for each offence. This extraordinary measure continued in force down to 1831, when it was repealed, an Act which gave a great impetus to calico printing, and established it as one of the most important industries in the country. The production during the 20 years between 1381 and 1851 increased from 8,000,000 pieces to 20,000,000. The character of the goods was greatly improved, as well as the processes and machinery, while the cost of production was much reduced by the enormous quantities manufactured. There are various methods of calico printing, the simplest of which is block-printing—printing by hand, in which the pattern, or a portion thereof, is engraved in relief upon the face of a block of sycamore, holly, or pear-tree wood, backed with deal and furnished with a strong handle of boxwood. A machine called the *Perrotine*, in honour of its inventor, M. Perrot, of Rouen, is in use in France and Belgium as a substitute for hand-block printing. The invention of cylinder or roller-printing is the greatest achievement that has been made in the art. A length of calico equal to one mile can, by this method, be printed off with four different colours in one hour, and more accurately and with better effect than block-printing by hand. The annual production is estimated at 20,000,000 pieces. The seat of the industry is in Lancashire, and the depot is Manchester. The principal countries to which printed goods are shipped are India, Brazils, and East coast of South America, the United States, Turkey, North Germany, and the West Indies. To compete successfully against Lancashire has been the constant aim of the Americans, as the consumption in the States is more per head for the population than that of any other country. "But," says Mr. Edmund Potter—no mean authority—"the printing is more remarkable for mechanical power and speed than for taste. . . . Her cost of production is also much higher, from her high-priced labour, coal, and drugs." From this statement, as well as from the exports to the States, we may infer that the calico-printers of Lancashire cannot be beaten in their own industry by the Americans. "Although the different methods of printing are numerous, and the combinations of colours and shades of colour almost infinite, yet each colour in a pattern must, in the present state of the art, be applied by one of six different styles of work. These are termed, 1, the madder style; 2, printing by steam; 3, the padding style; 4, the resist style; 5, the discharge style; and 6, the China blue style. By the proper combination of two or more of these styles any pattern, however complicated, is produced. The processes actually required for finishing a piece of cloth are numerous: as, for example, in producing a red stripe upon a white ground, the bleached cloth is submitted to nineteen operations, as follows:—1, printing on mordant of red liquor (a preparation of alumina) thickened with flour and dyeing; 2, dyeing for three days; 3, dunging; 4, wincing in cold water; 5, washing at the dash wheel; 6, wincing in dung, substitute and size; 7, wincing in cold water; 8, dyeing in madder; 9, wincing in cold water; 10, washing at the dash wheel; 11, wincing in soap-water; 12, washing at the dash wheel; 13, wincing in soap-water; 14, wincing in a solution of bleaching-powder; 15, washing at the dash wheel; 16, drying by the water-extractor; 17, folding; 18, starching; 19, drying by steam."—*Tomlinson.*

CALIFORNIA, *see* SAN FRANCISCO.

CALUMBUCO, the name of one of the best timber-trees of the Philippine Islands, the wood of which is largely employed by the natives in the fabrication of domestic utensils and agricultural implements.

CALX literally signifies lime, or a sort of stone calcined by fire; but it is used to signify any body in general after it has been calcined.

CAMBAY STONE, a kind of cornelian brought from the East Indies.

CAMBIST, a name given in France to bill-brokers.

CAMBRIC [Fr. *Cambray batiste*, Ger. *Kammertuch*], a kind of fine white linen, which derives its name from Cambray, in French Flanders, made now of an excellent quality, and in considerable quantities, in the United Kingdom.

CAMBRIDGESHIRE, an inland county of England, in its east part, having on the N. and N.W. Lincoln, Northampton, Huntingdon, and Bedford; on the S. Hertfordshire and Essex; and on the E. and N.E. Suffolk and Norfolk. The surface, except on the south, marshy, flat, fenny land, crossed by dykes, canals, and ditches, and thickly wooded. *Area.* 525,182 statute acres. *Pop.* 170,531. Occupiers of land, 6,715. Average extent of each holding, 70 acres. Total acreage under all kinds of crops, 471,815. Under wheat, 129,682; barley or bere, 57,111; oats, 38,448; rye, 982; beans, 25,726; peas, 9617. Total under corn crops, 261,566. *Green crop.* Potatoes, 11,598; turnips and swedes, 21,140; mangold, 16,302; carrots, 1302; cabbage, kohl, and rape, 13,334; vetches, lucerne, and any other green crop except clover and grass, 13,380. Total under green crop, 57,056. Flax, 1220; hops, 3; bare fallow, or uncropped arable land, 15,386; clover, sanfoin, and grasses in rotation, 43,031; permanent pasture, meadow, or grass not broken up in rotation (exclusive of heath or mountain land), 73,553. *Live stock.* Horses, 24,270; cattle, 38,695; sheep, 324,722; pigs, 38,765.

CAMEL'S HAIR is principally used in England in the manufacture of pencils for painting, and in the East it is woven into clothing, tents, ropes, &c. The best hair comes from Persia. The qualities are black, red, and grey. The black is the dearest.

Camlet [Fr. *Camelot*, Ger. *Kamelot*, It. *Ciambellotto*], a light stuff made of long wool, hand spun, mixed in the loom with cotton or linen yarn.

Camomile [Fr. *Camomile*, Ger. *Romische kamiller*, It. *Camomilla*], a useful herb, a native of Europe and Persia, and grows abundantly in most parts of Great Britain. The supplies brought to the London market come from Mitcham, in Surrey.

Campanini, a name given to an Italian marble, dug out of the mountains of Carara.

Camphor [Ger. *Kampfer*, Du. *Kamfer*, Da. *Kampher*, Sw. *Kamfer*, Fr. *Camphre*, It. *Canfora*, Sp. *Alcanfor*, Rus. *Kamfora*, Port. *Alcanfor*]. The *laurus camphoratus* is a tree which grows in China, Japan, and several parts of India. The wood and roots being boiled in water, the camphor rises with the steam, and is condensed in small granular crystals, together with another sort apparently scraped from the cavities of the wood, and mixed with sand and ashes, and purified by a second sublimation by the chemists.

Camwood, the fine red wood of Africa and of the Brazils, principally used in turnery for the formation of the handles of knives, &c.

Canada, *see* Quebec.

Canary Islands [Sp. *Islas Canarias*], a group in the N. Atlantic, 60 miles from the W. coast of Africa, between *Lat.* 27° 40′ and 29° 25′ N., *Lon.* 13° 25′ and 18° 16′ W. There are seven principal islands and several islets, arranged thus from E. to W.:—Sanzarote and Fuerteventura, with the islets Graciosa, Montana Clara, Allegranza, and Lobos, Gran Canaria, Teneriffe, Gomera, Palma, and Hierro. *Area*, 1,758 square miles. *Pop.* 234,046 Santa Cruz in Teneriffe, and Las Palmas in Canary, are the principal commercial ports. *Agriculture.* The gradual and steady increase in the production of cochineal, for which these islands are celebrated, is materially increasing the wealth of those engaged in its cultivation. Its cultivation is so profitable that it attracts all available capital, and therefore the necessaries of life, which were formerly produced here in abundance, are no longer sufficient in quantity to meet the requirements of the population; and unless the provincial authorities obtain permission from the Home Government to import live stock and other articles of consumption from Morocco, the poorer classes will be barely able to sustain existence.

Rearing Cochineal. The cochineal insect is a species of coccus, about the size of a pea; it has a silvery-gray appearance, the body being reddish-black, and covered with fine white dust. When first brought forth, the insect moves about freely; but, as it grows, it fixes itself to the leaf from which it derives its nourishment. There are several varieties of the prickly pear plant on which the cochineal feeds, but that most generally cultivated for the purpose of breeding is the common hardy *Cactus opuntii.* This plant is so hardy as to grow luxuriantly on rocky spots, where there appears to be scarcely soil to fill the crevices; but in this state it cannot serve for the rearing of cochineal for more than one or two seasons. In rich soil, and with abundance of manure and water, the same plants will continue to yield excellent crops for from ten to twelve years. The growers of the plant on the south side of the island of Teneriffe cultivate the cochineal in the winter, so as to bring it to maturity in time for the great crop of cactus, which is planted from the latter end of May to the end of July or August—the insects being carried to the north of the island in boxes supplied with trays, in which they are laid to the depth of two inches. Each box is constructed to hold 40 lb, and is carried on a man's shoulders over the mountains during the night, so as to be as little exposed to the sun as possible. In Grand Canary the planters reserve a portion of their land for the production of "madres" (mothers). The state of the weather during the growth of the "madres," and the temperature at the time of spawning, has so great an effect upon the amount of seedings produced, that it is impossible to fix the quantity of "madres" required per acre; but from about eight to ten boxes—that is, from three to four quintals—would be considered a fair average. The mothers are put into small bags, made of a material called "reuque" (a sort of gauze), about eight or nine inches long, and shaped somewhat like a sausage, in each of which is put about a tablespoonful of "madres," and hung over a leaf in the cochineal plantation. The young, as they are born, walk out of the bag to the cactus, and spread over the surface of the leaf. The quantity of insects spawned in a given time will vary according to the heat of the weather and the age of the "madres:" with fresh "madres," and in warm weather, a couple of hours will be enough to cover the leaf sufficiently; with old "madres," and in cool weather, the bags may be left on the leaves as long as thirty hours, or even two days. When the "madres" have exhausted their powers, which occurs sooner or later, according to the temperature to which they are exposed, and which is known by the young being born black instead of white, they are collected from the bags or trays in which they have been spawning, and put into an oven to dry. The young insect takes more or less time in coming to maturity, according to the weather. Those planted in June are often ready to be gathered in seventy days, or even earlier; whereas those planted in October and November are not ripe till late in February or early in March. On the other hand, the cochineal planted in March or April ripens with astonishing rapidity under the influence of the increasing heat. The cochineal planted in June and July, being the great crop of the year, prepared principally for drying at once into silver cochineal, should be gathered before it commences to spawn. Thus, during August and September, the grower watches for the first symptoms of spawning, and as soon as they appear, not a moment is lost in proceeding to immediate gathering; for the weather being then quite as warm and bright as in June, the same rapidity in ripening is observable, and the loss of weight is serious if the spawning is allowed to proceed for even a few hours. In gathering, the leaves on which the bags are placed are sharply cut off with a knife close to the branches, and the cochineal is swept off them into broad baskets, closely woven to prevent loss. As the crop is collected, care should be taken that the baskets do not remain long filled, the insects that lie at the bottom being injured by the weight. The cochineal gathered during the day is, towards evening, put into an oven heated at about 150° Fah.; there it is left for four or five hours, the temperature being carefully kept up; afterwards the oven is allowed to cool gradually until the morning, when it will be found that the insects are still moist, but exposure to the sun for a few days will complete the drying. When the grain has been thoroughly dried and cleaned, it is packed for exportation in bags containing 150 lb. each. The following account shows the amount of the first outlay, and of the annual expenses and profits per acre of the cochineal plantation:—

Purchase value of land per acre ..	£50	0	0
Preparation of land, and cost of planting and growing cactus for the first year, before receiving the cochineal crop	90	0	0
Bags, baskets, and other utensils ..	10	0	0
First outlay	£150	0	0

ANNUAL EXPENSES.

8 boxes of "madres," at 2*s.* per lb.	£32	0	0
Wages for planting, gathering, and preparing cochineal	30	0	0
12 quintals of guano, at 13*s.* 4*d.* per quintal	8	0	0
Digging, weeding, watering, and general expenses	18	0	0
Total	£88	0	0

ANNUAL PROFITS.

50 lb. of black "madres"..........	£8	0	0
8 quintals of silver cochineal, at 3*s.* per lb.	120	0	0
Total	£128	0	0
Net profit...............	£40	0	0

The average price at which the "madres" can be obtained varies much at different times, falling as low as 9*d.*, and frequently rising to 2*s.* 6*d.*, and even 3*s.* per lb. The management of the insect gives employment to a large number of women; it can almost exclusively be conducted by them. The larger proprietors employ most of their hands during the whole year, so as to command a full number when the labour of the season comes on. The wages of the women in the valley of Orotora is 6*d.* per day, or 3*s.* 6*d.* per week for the best workers. Day-labourers receive at the rate of 6*s.* 3*d.* per week for digging and planting. An experienced and attentive grower obtains a return of from 25 to 30 per cent. on the capital employed. *Exports.* The total value of exports from the Canary Islands to Europe, Africa, and America, in 1869, is here shown:—

COUNTRIES.	VALUE.
Great Britain	£556,799
France	244,450
Spain	66,800
Germany	8,369
Holland............................	3,437
Portugal	326
Morocco and Colonies	5,615
Spanish Antilles	28,956
United States	1,976
Other Countries	2,193
Total	£918,901

The total quantity of cochineal exported was 6,316,000 lb., value £842,921. The next table gives the comparative quantity and the value exported for five years:—

	Quantities.	Value.
	Lb	£
1865	2,391,220	302,878
1866	3,416,664	473,429
1867	5,317,234	625,303
1863	4,685,538	609,027
1869	6,316,000	842,921

The island of Grand Canary exported more cochineal by 647,550 lb. than the combined amount exported by the three other cochineal producing islands. The amount exported to England was 2,905,550 lb. Only 261 pipes of wine were shipped during the year, against 515 in 1868, and 500 in 1867. *Imports*, value of, during the year, is thus shown:—

COUNTRIES.	VALUE.
Great Britain	£234,545
France	139,130
Spain.	176,837
Germany	12,281
Italy	9,171
Holland	4,785
Portugal	543
Morocco and Colonies	16,302
Spanish Antilles	82,543
United States	21,902
Other Countries	84,096
Total......................	£782,135

(Including guano from Peru, value £82,213.)

COMPARATIVE VALUE OF THE EXPORTS AND IMPORTS WITH GREAT BRITAIN DURING FIVE YEARS.

	Value of Exports.	Value of Imports.
	£	£
1865	207,836	195,559
1866	336,415	322,827
1867	459,462	328,657
1868	402,298	333,847
1869	556,779	234,545

Shipping. British vessels which entered and cleared at the port of Santa Cruz, Teneriffe, in the years 1868 and 1869.

ENTERED.

	No. of Vessels.	Tons.	Crews
1868	114	54,387	3,247
1869	130	66,466	3,438

CLEARED.

1868	113	54,323	3,237
1869	128	63,590	3,369

CANARY SEED [Ger. *Kanariensaamen*, Du. *Kanaryzaad*, Da. *Canariefrõe*, Sw. *Kanarie-frö*, Fr. *Alpiste*, *Graine d'oiseau*, *Graine de Canarie*, *Millet*, It. *Sema di Canario*, *Sicil*, *Scaglinola*, *Scaghiola*, *Malta*, *Cuneno*, Sp. *Alpiste*, Port. *Alpista*, *Arpista*, Rus. *Kanarrikino Semja*], a small grain of a white or reddish colour, used to feed birds with, and sometimes employed by persons as artificial food.

CANDLE [Ger. *Lichter*, *Kerzen*, Du. *Kaarsen*, Fr. *Chandelle*, It. *Candelle*, Sp. and Port. *Velas*], a taper of tallow, wax, or spermaceti, the wick of which is composed of spun cotton. The export trade in this article amounts to about £140,000 annually.

CANDLESTICKS [Ger. *Leuchter*, Du *Kandelaars*, Da. *Lysestager*, Sw. *Ljusstakar*, Fr. *Chandeliers*, It. *Candellieri*, Sp. *Candeleros*, Port. *Castiçaes*, Rus. *Podsweschniki*, Pol. *Lichtarz*], are of silver, brass, iron, tin japanned, or copper plated, made of different patterns and sorts. The best plated candlesticks are manufactured at Sheffield; the common sort of plated ones, as also brass, japanned, &c., are made at Birmingham.

CANDY, a preparation of sugar, made by melting and crystallizing it six or seven times over, to render it soft and transparent.

CANE [Ger. *Spanisches Rohr*, Du. *Spaansch riet kotting*, Da. *Spanskrör*, Fr. *Canne*, *Canne du Bengale*, It. *Canna*, *Cannetta di India*, Sp. *Cana de Indias*] is a reed brought from the East Indies. Some are without knots, and very smooth and even; that is, when the reed is grown so long that the distance between two knots is large enough to make a cane or walking-stick. Others are full of knots, about two inches distant from each other. These last have very little elasticity, and will not bend so well as the others. The most beautiful canes imported come from the Indian Archipelago. Some of them are so fine that they are worked into vessels or bowls, which, being varnished over on the inside with black or yellow lacker, will hold water. There are several sorts of canes. 1. *Arundo bambos*, or the bamboo, a native of the East Indies and some parts of America, where it frequently attains the height of 60 feet. 2. *Arundo donax*, or cultivated reed, is a native of warm countries, but will bear the cold of our moderate winters in the open air. The stalks are used by weavers, and in the manufacture of fishing-rods. 3. *Arundo Orientalis* is what the Turks use as writing-pens. It grows abundantly in a valley near Mount Athos, as also on the banks of the Jordan. 4. *Arundo phragmates*, or the common marsh reed, grows by the side of our rivers, and in standing water.

CANELLA ALBA, *White Canella*, cinnamon in small pipes. It is, both outwardly and inwardly, of a whitish colour, lightly inclining to yellow. It is thicker than cinnamon, has a fragrant smell, and a smart, pungent taste, with something of the aromatic in it, resembling a mixture of cinnamon, ginger, and cloves. The white canella yields, upon being macerated and distilled, an aromatic essential oil of a yellowish colour, which somewhat resembles in smell the oil of cloves, and sinks in water.

CANICA, a sort of spice which grows in Cuba. It is a kind of wild cinnamon, but its taste is more like that of cloves than of cinnamon. It is a saleable commodity in the Spanish islands.

CANTHARIDES OF SPANISH FLY [Ger. *Spanische Fliegen*, Du. *Spaansche vliegen*, Da. *Spansk: fluer*, Sw. *Spanska flugor*, Fr. *Cantharides*, *Mouches d'Espagne*, It. *Cantarelle*, Spa. and Port. *Cantaridas*, Rus. *Hischpanskie muchi*, Pol. *Kantarijdi*, Lat. *Cantharides*] are flies of a shining green colour, intermingled with somewhat of the blue, and of a golden yellow, of an acrid highly caustic taste, while fresh. They are found adhering to certain kinds of trees, in the warmer climates of Spain, Italy, and France, and sometimes in Germany. In bulk and colour they differ considerably from each other. The largest and best come from Italy. They are killed by the steam of vinegar, and then dried in the sun. Cantharides should be chosen large, fresh, dry, whole, and without dust. They are apt to rot upon keeping, and fall to powder, when they are good for nothing.

CANVAS [Ger. *Segeltuch*, Du. *Zeildoek*, Da. *Sejldug*, Sw. *Segelduk*, F. *Toile à voile*, It. *Canevazza*, *Lona*, Sp. and Port. *Lona*, Rus. *Parussnoe polotno*, *Parussina*], a very clean unbleached cloth of hemp or flax, woven very regularly in little squares. It is used for working tapestry with the needle, by passing the threads of gold, silver, silk or wool, through the intervals or squares. It is also a coarse cloth of hemp, unbleached, somewhat clean, which serves to cover women's stays, also to stiffen men's clothes, and to make some other parts of their wearing apparel, &c. It is chiefly used to make sails for shipping. Large quantities are manufactured at Dundee.

CAOUTCHOUC [Fr. *Caoutchou*, Ger. *Federharz*, Port. *Boracha*, Sp. *Resina elastica*], called by the South American Indians *cahuchu*, the concrete, milky juice of a number of trees and plants found in Brazil, Guiana, Peru, &c., and in the East Indies. One source of this very remarkable substance is the syringe-tree of Cayenne and other parts of South America. The French were the first discoverers of this source. The province of Para, south of the equator, furnishes immense quantities of this article to commerce. There the trees grow in great abundance. Caoutchouc oozes out as a vegetable substance from incisions made in the tree. It is collected chiefly in wet weather, when it flows most plentifully. The trees are tapped in the morning, and during the day a gill of fluid is received in a clay cup placed at each incision in the trunk. This is turned, when full, into a jar, and is ready at once to be poured over any pattern of clay, or a wooden last covered with clay, the form of which it takes as successive layers are thus applied. As these layers are applied, their drying and hardening are hastened by exposure to the smoke and heat of a fire, and thus the substance acquires its ordinary black colour. Dried by the sun alone, it is white within and yellowish brown without. When pure it is nearly colourless. Complete drying requires several days' exposure to the sun. During this time the substance is soft enough to receive impressions from a stick, and is thus ornamented by various designs. The importations into this country amount to about 80,000 cwts. annually.

CAPE is a promontory or headland running out with a point into the sea.

CAPE COLONY, *see* SOUTH AFRICA.

CAPPADINE, a sort of silk flock taken from the upper part of the silkworm-cod after the true silk has been wound off.

CAPSICUM [*Guinea pepper*] is of three sorts, viz.: 1. *Capsicum annuum*, the common long-podded capsicum. 2. *Capsicum baccacum*, the bird-pepper, grows nearly five feet high; the leaves are of a lucid green. This is the Cayenne-pepper. 3. *Capsicum grossum*, the bell-pepper. The fruit of this is red, and is the only kind proper for pickling, the skin being tender, whereas those of the other sorts are thin and tough.

CAPSTAN, CAPSTERN, or MAIN CAPSTAN, in a ship, a large piece of timber in the nature of a windlass, placed next behind the main-mast, its foot standing in a step on the lower deck, and its head between the upper decks, formed into several squares with holes in them. It is used to weigh the anchors, to hoist up or strike down top-masts, to heave any weighty matter, or to strain any rope that requires a main force.

CARAPACE, a thick, solid, and firm shell, which covers the turtle, or tortoise, and to which adhere those fine transparent shells which are known under the name of tortoise shells, of which snuff-boxes and several sorts of inlaid works are made.

CARAT, the name of that weight which expresses the degree of fineness that gold is of. The Mint-master or custom has fixed the purity of gold at 24 carats; though it is not possible to purify and refine that metal, but it will want still about one-fourth part of a carat in absolute purity and perfection. The carat is divided into one-fourth, one-eighth, seven-sixteenths, one thirty-second. These degrees serve to distinguish the greater or less quantity of alloy therein contained: for instance, gold of 22 carats is that which has two parts of silver or of any other metal, and 22 of fine gold. It is also a certain weight which goldsmiths and jewellers use, with which to weigh precious stones and pearls. This carat weighs four grains, but is something lighter than the grains of other weights. Each of these grains is subdivided into one-half, one-fourth, one-eighth, one-sixteenth, &c.

CARAVAN signifies a company of travellers, and more particularly merchants who for their greater security travel together through the desert and other places which are infested with Arabs and robbers. There are five kinds of caravans: the heavy caravans, composed of elephants, dromedaries, camels, and horses; the light caravans, which have but few elephants; the common caravan, where there are none of those animals; the horse caravans, in which they use neither dromedaries nor camels; and, lastly, the river caravan, consisting of a number of boats.

CARAWAY, or CARAWAY SEED [Ger. *Kümmel*, *Feldkümmel*, *Brodkümmel*, Fr. *Carri*, *Cumin desprès*], is a small seed of an oblong and slender figure, pointed at both ends and thickest in the middle. It is rounded or gibbous on one side and flat on the other, and is deeply striated on the surface; it is heavy, and its colour a deep brown. It should be chosen large, new, and of a good colour, not dusty and of a strong agreeable smell.

CARBUNCLE [Ger. *Karfunkel*, Fr. *Escarboukle*, It. *Carbonchio*], a precious stone of the ruby kind, of a very rich glowing blood-red colour.

CARDAMOMS [Ger. *Kardamum*, Du. *Kardamomen*, Da. *Cardamomer*, Sw. *Kardemummor*, Fr. *Cardamomes*, It. *Cardumomi*, Sp. and Port. *Kardamoms*, Rus. *Kardamom*] are of a dark brown colour, an aromatic smell and a hot biting taste, and are contained in short triangular pods of a pale colour. There are two sorts, both natives of India; the *greater* and *lesser* cardamoms. All kinds abound in an essential oil; bruised and macerated in water, and afterwards distilled, they yield a very considerable quantity of it. They are to be chosen sound, close shut on all parts, and full of seeds of a good smell, and of an acrid aromatic taste.

CARDIGAN, a county of S. Wales, having W. Cardigan Bay, and enclosed landward by the counties Merioneth, Montgomery, Radnor, Brecon, Carmarthen, and Pembroke. Surface, level at the coast, mountainous in the interior. *Industries*. Rearing of sheep, mining for silver, lead, and copper, and the manufacture of gloves and flannel. *Area*, 443,387. *Pop.* 72,606. Occupiers of land, 5,262; average extent of each holding, 48 acres; total acreage under all kinds of crop, bare, fallow, and grass, 251,675. *Under corn crops*. Wheat, 9,249; barley or bere, 23,801; oats, 31,194; rye, 318; beans, 25; peas, 382; total, 64,679. *Green crop*. Potatoes, 7,685; turnips and swedes, 4,417; mangold, 452; carrots, 30; cabbage, kohl rabi, and rape, 38; vetches, lucerne, and any other green crop (except clover or grass), 373; total, 12,995. Flax, 9; bare, fallow, or uncropped arable land, 3,308; clover, sanfoin, and grasses in rotation, 42,014; permanent pasture, meadow, or grass not broken up, in rotation (exclusive of heath or mountain land), 128,380. *Live stock*. Horses, 11,249; cattle, 54,419; sheep, 185,670; pigs, 19,476.

CARGO signifies all the merchandize and effects laden on board a ship exclusive of the stores.

CARLINGS, in a ship, two pieces of timber lying fore and aft along from beam to beam, whereon the ledges rest on which the planks of the ship are fastened.

CARMARTHEN, a county of S. Wales, having on the S. the Bristol Channel, and on the other sides the counties Pembroke, Cardigan, Brecon, and Glamorgan. Surface hilly, interspersed with productive valleys. Besides agricultural produce, the exports are iron, lead, coal, and lime. *Area*, 606,331 acres. *Pop.* 111,453. *Occupiers of land*, 8,048. Average extent of each holding, 49 acres. Total acreage under all kinds of crop, bare, fallow, and grass, 393,220. *Under corn crops*. Wheat, 12,806 acres; barley or bere, 21,554; oats, 41,404; rye, 256; beans, 75; peas, 73; total, 76,228 acres. *Green crops*. Potatoes, 4,853; turnips and swedes, 4,337; mangold, 525; carrots, 50; cabbage, kohl rabi, and rape, 32; vetches, lucerne, and any other green crop (except clover or grass), 226; total, 10,023. Flax, 15; bare, fallow, and uncropped arable land, 6,059 acres; clover, sanfoin, and grasses in rotation, 48,670; permanent pasture, meadow or grass, not broken up in rotation (exclusive of heather mountain land), 252,225 acres. *Live stock*. Horses, 16,030; cattle, 99,445; sheep, 212,731; pigs, 25,452.

CARMELINE or **CARMENIA** Wool is the second sort of wool produced by the Vicuna a kind of sheep, a native of South America.

CARMINE [Ger. Rus. and Pol. *Karmin*, Du. *Karmyn*, Da. Sw. and Sp. *Carmin*, Fr. *Carmine*, It. *Carminio*], a powder of a beautiful red colour, used by painters. It is sometimes made from cochineal by means of water in which *chouan* or *autour* has been infused. Others make it with Brazil wood, pernambouc, and leaf gold beaten in a mortar and steeped in vinegar; the scum arising from the mixture upon boiling, when dried, makes carmine, but of a very inferior quality. *Chouan* is a small seed of yellowish green colour, resembling worm seed brought from the Levant. *Autour* or *Antour* is a kind of bark, also brought from the Levant, resembling cinnamon in shape and colour, only a little thicker and paler.

CARNARVON, a county of N. Wales, separated from Anglesea by the Menai Straits, extending from Conway on the N. in a S. W. direction along the shore to the extremity of the peninsula of Lleyn, opposite Bardsey Island, having E part of Cardigan Bay, and the counties Merioneth and Denbigh. Surface altogether mountainous. Oats and barley are raised in the valleys, but the chief branch of rural industry is rearing of cattle, for dairy produce, and a diminutive breed of sheep. *Area*, 370,273 stat. acres. *Pop.* 101,463. *Occupiers of land*, 5,314; average extent of each holding, 35 acres. Total acreage under all kinds of crop, bare, fallow, and grass, 185,813 acres *Under corn crops*. Wheat, 2,136 acres; barley or bere, 8,982; oats, 13,580; rye, 121; beans, 162; peas, 149; total, 251,30. *Green crops*. Potatoes, 5,625; turnips and swedes, 2,306; mangold, 418; carrots, 60; cabbage, kohl rabi, and rape, 5; vetches, lucerne, and any other green crop (except clover and grass), 141; total, 8,555. Flax, 1; bare, fallow, or uncropped arable land, 2,132; clover, sanfoin, and grasses in rotation, 44,286; permanent pasture meadow, or grass, not broken up in rotation (exclusive of heath or mountain land), 105,709. *Live stock*. Horses, 7,934; cattle, 46,842; sheep, 203,829; pigs, 19,356.

CARNELLIAN, **CARNELION**, or **CORNELIAN** *Sarda*, in natural history, a precious stone, of which there are three kinds, distinguished by three colours—a red, a yellow, and a white. Authors have attributed medical virtues to this stone, meaning the red carnelian; this, therefore, is to be understood as the *sarda*, or carnelian of the shops. It is very well known amongst us, and is found in roundish and oval masses much like our common pebbles. It is generally met with between an inch and two or three inches in diameter. It is fine, compact, and close in its texture, of a glossy surface, and in several specimens is of all the degrees of red from the palest flesh-colour to the deepest blood-red. It is generally free from spots, clouds, or variegations; but sometimes it is veined very beautifully with an extremely pale red, or with white, the veins forming concentric circles, or other less regular figures, about a nucleus, in the manner of those of agates. The pieces of carnelian which are all of one colour and perfectly free from veins, are those which our jewellers generally make use of for seals, though the variegated ones are much more beautiful. The carnelian is tolerably hard, and capable of a very good polish; it is not at all affected by acid menstruums;

which serves to cover women's stays, also to stiffen men's clothes, and to make some other parts of their wearing apparel, &c. It is chiefly used to make sails for shipping. Large quantities are manufactured at Dundee.

CAOUTCHOUC [Fr. *Caoutchou*, Ger. *Federharz*, Port. *Boracha*, Sp. *Resina elastica*], called by the South American Indians *cahuchu*, the concrete, milky juice of a number of trees and plants found in Brazil, Guiana, Peru, &c., and in the East Indies. One source of this very remarkable substance is the syringe-tree of Cayenne and other parts of South America. The French were the first discoverers of this source. The province of Para, south of the equator, furnishes immense quantities of this article to commerce. There the trees grow in great abundance. Caoutchouc oozes out as a vegetable substance from incisions made in the tree. It is collected chiefly in wet weather, when it flows most plentifully. The trees are tapped in the morning, and during the day a gill of fluid is received in a clay cup placed at each incision in the trunk. This is turned, when full, into a jar, and is ready at once to be poured over any pattern of clay, or a wooden last covered with clay, the form of which it takes as successive layers are thus applied. As these layers are applied, their drying and hardening are hastened by exposure to the smoke and heat of a fire, and thus the substance acquires its ordinary black colour. Dried by the sun alone, it is white within and yellowish brown without. When pure it is nearly colourless. Complete drying requires several days' exposure to the sun. During this time the substance is soft enough to receive impressions from a stick, and is thus ornamented by various designs. The importations into this country amount to about 80,000 cwts. annually.

CAPE is a promontory or headland running out with a point into the sea.

CAPE COLONY, *see* SOUTH AFRICA.

CAPPADINE, a sort of silk flock taken from the upper part of the silkworm-cod after the true silk has been wound off.

CAPSICUM [*Guinea pepper*] is of three sorts, viz.: 1. *Capsicum annuum*, the common long-podded capsicum. 2. *Capsicum baccatum*, the bird-pepper, grows nearly five feet high; the leaves are of a lucid green. This is the Cayenne-pepper. 3. *Capsicum grossum*, the bell-pepper. The fruit of this is red, and is the only kind proper for pickling, the skin being tender, whereas those of the other sorts are thin and tough.

CAPSTAN, CAPSTERN, or MAIN CAPSTAN, in a ship, a large piece of timber in the nature of a windlass, placed next behind the main-mast, its foot standing in a step on the lower deck, and its head between the upper decks, formed into several squares with holes in them. It is used to weigh the anchors, to hoist up or strike down top-masts, to heave any weighty matter, or to strain any rope that requires a main force.

CARAPACE, a thick, solid, and firm shell, which covers the turtle, or tortoise, and to which adhere those fine transparent shells which are known under the name of tortoise shells, of which snuff-boxes and several sorts of inlaid works are made.

CARAT, the name of that weight which expresses the degree of fineness that gold is of. The Mint-master or custom has fixed the purity of gold at 24 carats; though it is not possible to purify and refine that metal, but it will want still about one-fourth part of a carat in absolute purity and perfection. The carat is divided into one-fourth, one-eighth, seven-sixteenths, one thirty-second. These degrees serve to distinguish the greater or less quantity of alloy therein contained: for instance, gold of 22 carats is that which has two parts of silver or of any other metal, and 22 of fine gold. It is also a certain weight which goldsmiths and jewellers use, with which to weigh precious stones and pearls. This carat weighs four grains, but is something lighter than the grains of other weights. Each of these grains is subdivided into one-half, one-fourth, one-eighth, one-sixteenth, &c.

CARAVAN signifies a company of travellers, and more particularly merchants who for their greater security travel together through the desert and other places which are infested with Arabs and robbers. There are five kinds of caravans: the heavy caravans, composed of elephants, dromedaries, camels, and horses; the light caravans, which have but few elephants; the common caravan, where there are none of those animals; the horse caravans, in which they use neither dromedaries nor camels; and, lastly, the river caravan, consisting of a number of boats.

CARAWAY, or CARAWAY SEED [Ger. *Keümmel*, *Feldkümmel*, *Brodkümmel*, Fr. *Carvi*, *Cumin desprès*], is a small seed of an oblong and slender figure, pointed at both ends and thickest in the middle. It is rounded or gibbous on one side and flat on the other, and is deeply striated on the surface; it is heavy, and its colour a deep brown. It should be chosen large, new, and of a good colour, not dusty and of a strong agreeable smell.

CARBUNCLE [Ger. *Karfunkel*, Fr. *Escarboukle*, It. *Carbonchio*], a precious stone of the ruby kind, of a very rich glowing blood-red colour.

CARDAMOMS [Ger. *Kardamum*, Du. *Kardamomen*, Da. *Cardamomer*, Sw. *Kardemummor*, Fr. *Cardamomes*, It. *Cardumomi*, Sp. and Port. *Kardamoms*, Rus. *Kardamom*] are of a dark brown colour, an aromatic smell and a hot biting taste, and are contained in short triangular pods of a pale colour. There are two sorts, both natives of India; the *greater* and *lesser* cardamoms. All kinds abound in an essential oil; bruised and macerated in water, and afterwards distilled, they yield a very considerable quantity of it. They are to be chosen sound, close shut on all parts, and full of seeds of a good smell, and of an acrid aromatic taste.

Cardigan, a county of S. Wales, having W. Cardigan Bay, and enclosed landward by the counties Merioneth, Montgomery, Radnor, Brecon, Carmarthen, and Pembroke. Surface, level at the coast, mountainous in the interior. *Industries.* Rearing of sheep, mining for silver, lead, and copper, and the manufacture of gloves and flannel. *Area*, 443,387. *Pop.* 72,606. Occupiers of land, 5,262 ; average extent of each holding, 48 acres ; total acreage under all kinds of crop, bare, fallow, and grass, 251,675. *Under corn crops.* Wheat, 9,249 ; barley or bere, 23,801 ; oats, 31,194 ; rye, 318 ; beans, 25 ; peas, 382 ; total, 64,679. *Green crop.* Potatoes, 7,685 ; turnips and swedes, 4,417 ; mangold, 452 ; carrots, 30 ; cabbage, kohl rabi, and rape, 38 ; vetches, lucerne, and any other green crop (except clover or grass), 373 ; total, 12,995. Flax, 9 ; bare, fallow, or uncropped arable land, 3,308 ; clover, sanfoin, and grasses in rotation, 42,014 ; permanent pasture, meadow, or grass not broken up, in rotation (exclusive of heath or mountain land), 128,380. *Live stock.* Horses, 11,240 ; cattle, 54,419 ; sheep, 185,670 ; pigs, 19,476.

Cargo signifies all the merchandize and effects laden on board a ship exclusive of the stores.

Carlings, in a ship, two pieces of timber lying fore and aft along from beam to beam, whereon the ledges rest on which the planks of the ship are fastened.

Carmarthen, a county of S. Wales, having on the S. the Bristol Channel, and on the other sides the counties Pembroke, Cardigan, Brecon, and Glamorgan. Surface hilly, interspersed with productive valleys. Besides agricultural produce, the exports are iron, lead, coal, and lime. *Area*, 606,331 acres. *Pop.* 111,453. *Occupiers of land*, 8,048. Average extent of each holding, 49 acres. Total acreage under all kinds of crop, bare, fallow, and grass, 393,220. *Under corn crops.* Wheat, 12,866 acres ; barley or bere, 21,554 ; oats, 41,404 ; rye, 256 ; beans, 75 ; peas, 73 ; total, 76,228 acres. *Green crops.* Potatoes, 4,853 ; turnips and swedes, 4,337 ; mangold, 525 ; carrots, 50 ; cabbage, kohl rabi, and rape, 32 ; vetches, lucerne, and any other green crop (except clover or grass), 226 ; total, 10,023. Flax, 15 ; bare, fallow, and uncropped arable land, 6,059 acres ; clover, sanfoin, and grasses in rotation, 48,670 ; permanent pasture, meadow or grass, not broken up in rotation (exclusive of heather mountain land), 252,225 acres. *Live stock.* Horses, 16,030 ; cattle, 99,445 ; sheep, 212,731 ; pigs, 25,452.

Carmeline or **Carmenia** Wool is the second sort of wool produced by the Vicuna a kind of sheep, a native of South America.

Carmine [Ger. Rus. and Pol. *Karmin*, Du. *Karmyn*, Da. Sw. and Sp. *Carmin*, Fr. *Carmine*, It. *Carminio*], a powder of a beautiful red colour, used by painters. It is sometimes made from cochineal by means of water in which *chouan* or *autour* has been infused. Others make it with Brazil wood, pernambouc, and leaf gold beaten in a mortar and steeped in vinegar ; the scum arising from the mixture upon boiling, when dried, makes carmine, but of a very inferior quality. *Chouan* is a small seed of yellowish green colour, resembling worm seed brought from the Levant. *Autour* or *Antour* is a kind of bark, also brought from the Levant, resembling cinnamon in shape and colour, only a little thicker and paler.

Carnarvon, a county of N. Wales, separated from Anglesea by the Menai Straits, extending from Conway on the N. in a S. W. direction along the shore to the extremity of the peninsula of Lleyn, opposite Bardsey Island, having E. part of Cardigan Bay, and the counties Merioneth and Denbigh. Surface altogether mountainous. Oats and barley are raised in the valleys, but the chief branch of rural industry is rearing of cattle, for dairy produce, and a diminutive breed of sheep. *Area*, 370,273 stat. acres. *Pop.* 101,463. *Occupiers of land*, 5,314 ; average extent of each holding, 35 acres. Total acreage under all kinds of crop, bare, fallow, and grass, 185,813 acres *Under corn crops.* Wheat, 2,136 acres ; barley or bere, 8,982 ; oats, 13,580 ; rye, 121 ; beans, 162 ; peas, 149 ; total, 251,30. *Green crops.* Potatoes, 5,625 ; turnips and swedes, 2,306 ; mangold, 418 ; carrots, 60 ; cabbage, kohl rabi, and rape, 5 ; vetches, lucerne, and any other green crop (except clover and grass), 141 ; total, 8,555. Flax, 1 ; bare, fallow, or uncropped arable land, 2,132 ; clover, sanfoin, and grasses in rotation, 44,286 ; permanent pasture meadow, or grass, not broken up in rotation (exclusive of heath or mountain land), 105,709. *Live stock.* Horses, 7,934 ; cattle, 46,842 ; sheep, 203,829 ; pigs, 19,356.

Carnellian, Carnelion, or **Cornelian** *Sarda, in natural history*, a precious stone, of which there are three kinds, distinguished by three colours—a red, a yellow, and a white. Authors have attributed medical virtues to this stone, meaning the red carnelian ; this, therefore, is to be understood as the *sarda*, or carnelian of the shops. It is very well known amongst us, and is found in roundish and oval masses much like our common pebbles. It is generally met with between an inch and two or three inches in diameter. It is fine, compact, and close in its texture, of a glossy surface, and in several specimens is of all the degrees of red from the palest flesh-colour to the deepest blood-red. It is generally free from spots, clouds, or variegations ; but sometimes it is veined very beautifully with an extremely pale red, or with white, the veins forming concentric circles, or other less regular figures, about a nucleus, in the manner of those of agates. The pieces of carnelian which are all of one colour and perfectly free from veins, are those which our jewellers generally make use of for seals, though the variegated ones are much more beautiful. The carnelian is tolerably hard, and capable of a very good polish ; it is not at all affected by acid menstruums ;

the fire divests it of a part of its colour, and leaves it of a pale red; and a strong and long-continued heat will reduce it to a pale dirty grey. The finest carnelians are those of the East Indies; but there are very beautiful ones found in the rivers of Silesia and Bohemia.

CARPET [Carpets, Ger. *Teppiche*, Du. *Tapyten*, *Vloer-tapyten*, Fr. *Tapis*, It. *Tappeti*], a stuff wrought with the needle or on a loom, which is part of the furniture of a house. Persian and Turkey carpets were long esteemed for the thickness and softness of their pile, but in these respects they have been surpassed by the productions of the French and Belgian looms. The best English carpets are produced at Axminster and Kidderminster.

CARRARA *marble*, the name of a species of white marble, distinguished from the Parian by being harder.

CARYOPHYLLUS AROMATICUS, the clove tree, is a native of the Molucca Islands. It resembles in its bark the olive, and it is about the height of the laurel. No verdure is ever seen under it. It has numerous branches, at the extremities of which are produced vast quantities of flowers, that are first white, then green, and at last pretty red and hard. When they arrive at this degree of maturity, they are properly speaking cloves. As they dry they assume a dark yellowish cast, and when gathered become of a deep brown. The cloves to be perfect must be full-sized, oily, and easily broken, of a fine smell and a hot aromatic taste.

CASTOR, or CASTOREUM, is the inguinal glands of the beaver; they are of various shapes and sizes, covered with a thick pelicle, filled with an unctuous liquor, which grows hard on keeping, and is of an acrid, bitterish, nauseous taste, and a strong, fragrant, but not at all agreeable smell. They should be chosen large, weighty, well filled, neither too dry nor too moist, of a brown colour, of a strong penetrating smell, and filled with a hard, brittle, and friable substance, of a brownish red colour, interspersed with fine membranes and fibres, exquisitely interwoven. The best sort is the Russian, which comes from Siberia; this is in large, round, hard cods, and appears, when cut, of a red liver colour. The second sort is brought from Dantzic; this is generally fat and moist. The worst of all is that of New England, which is in longish, hard, and thin cods. Another sort is brought from Hudson's Bay, resembling that of New England, but of a better quality. Sweet spirit of sal ammoniac seems to be the best calculated menstruum for *castor*, from which it soon draws a deep tincture, and at the same time adds to its medical virtues.

CASTOR-NUTS [Ger. *Purgiernüsse*, Du. *[illegible] Purgatie nooten*, Du. *Purgeernödder*, Sw. *[illegible] frö*, Fr. *Graines de ricin*, It. *[illegible]*, Sp. *Catapucia mayor*, *Chervas*, Port. *Carrapatos*, Lat. *Semina Ricini*, *s. Catapuciæ majoris*] are the nuts of the *Palma Christi*, from which the oil is extracted.

CASTOR-OIL, an oil extracted from the seeds or nuts of the *ricinus communis*, or *palma Christi*. The oil is extracted by expression, or by gentle boiling in water. It is commonly thick and viscid, of a light amber colour, and with little smell or taste. That which has least smell, taste, and colour is the mildest and best. If it has become acrimonious by keeping, shaking it in a bottle with a little warm water, and then pouring it off, will improve it.

CAT-HARPINGS in a ship, small ropes running in little blocks from one side of the shrouds to another near the deck. They are used to force the shrouds and make them taut, for the greater security and safety of the masts.

CAT or CAT-HEAD on board ship, a short piece of timber in a ship lying aloft right over the hawse, having at one end two shivers, wherein is reeved a rope with a great iron hook fastened to it, called

CAT-HOOK. Its use is to trice up the anchor from the hawse to the top of the forecastle.

CAT-HOLES in a ship are over the ports as right with the capstan as they can be; they are used to heave the ship astern upon occasion by a cable or hawse called stern-fast.

CAT'S-EYE, a name given by jewellers to the *asteria* of the ancients, a gem which more than any other approaches to the nature of the opal, but wants much of its beauty. It is naturally of a semicircular figure, or smaller segment of a sphere, and flat at the bottom. It is smooth and glossy, and of a pale-brown colour, in which it has an included white, which plays about in it, as held differently to the light, in the manner of the fire-colour of the opal, and seems, like that, bedded deep in the stone. It is sometimes tinged with a greenish, bluish, or yellowish colour. It is met with in the island of Borneo and in some other parts of the East Indies; also in New Spain, and in some parts of Europe, where it is found bedded in the same stone with the opals.

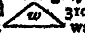
CAT SALT, a name given by salt workers to a very beautifully granulated kind of common salt. It is formed out of the bittern or leach-brine, which runs from the salt when taken out of the pan. When the common salt is taken from the boiling-pans, it is put into long wooden troughs, with holes bored at the bottom, for the brine to drain out; under these troughs vessels are placed to receive this brine, and across them small sticks, to which the cat-salt fixes itself in large and beautiful crystals. It contains some portion of the bitter purging salt, is sharp and pungent, and is white when powdered, though pellucid in the mass. Large quantities of this salt are used in the manufacture of hard soap.

CAYELAC, a sweet scented wood which grows in Siam.

CEDAR [Ger. *Zeder*, Du. *Ceder*, Da. *Ceder-træe*, Sw. *Cederträd*, Fr. *Cèdre*, It. Sp. and Port. *Cedro*, Rus. *Kedr*, Pol. *Cedr*, Lat. *Cedrus*], the cedar of Mount Lebanon, mentioned in the Scripture, is reckoned one of the finest and largest trees in the world. Its wood is very hard, beautiful, solid, inclining to a brown colour, and incorruptible. During the hottest season of the year, there runs naturally from the trunk and large branches, a white, clear, and transparent resin, called *cedar gum*. The timber of this tree is very dry, and subject to split; nor does it endure to be fastened with nails; therefore pins of the same wood are much preferable. Many of the West India islands, especially Jamaica, are well stored with cedars. In North America cedars are likewise very plenty. A small cedar tree grows in Phoenicia and Cilicia; it is pretty much like the juniper tree. Italy, Spain, and Provence have their cedars too.

CHEESE [Fr. *Fromage*, Ger. *Kase*, Du. *Kaas*, It. *Formaggio*, *Caci*, Sp. *Queso*, Rus. *Syr*], an universal food made by pressing the curd of coagulated milk, and suffering the mass to dry. The goodness of cheese, of course, depends on the richness of the milk from which it is made, as does the milk on the luxuriance and sweetness of the pastures wherein the cattle feed. Cheshire has been for ages celebrated for the superior quantity, as well as quality, of its cheese, an advantage that county derives from its rich and extensive pastures. Next to this, Gloucestershire furnishes a kind of cheese, perhaps higher and mellower in flavour, but by no means in such quantity, although a very considerable part of what is called both single and double Gloucester cheese is made in the adjoining counties of Somerset and North Wilts, where the pastures are sweeter, but not so luxuriant as in Cheshire. The high relish of cheeses made in some particular parishes is perhaps attributable to the double advantage of rich pastures and the farmers allowing little or no butter to be taken from the milk. Cheddar cheese seems to have derived its celebrity from the aromatic herbage peculiar to the Mendip hills and dales which partly surround the village, and which also gives a fine flavour to the mutton bred and fattened in that part of Somersetshire. The Stilton cheese, however, among epicures, has obtained a decided pre-eminence over every other kind produced. The cause in some degree is the excellence of the pastures, but much more in the policy of the farmer, who never deprives the milk of its cream, but takes more than the butter in the high price of his cheese. It is made principally in the villages round Melton Mowbray. The other cheeses made in England of note are those of Derbyshire, Cottenham, and Southam. Upwards of 800,000 cwt. are imported annually, at the value of £2,800,000, the greater part of which comes from the North American ports.

CENT., an abridgment of centum, is used to express the profit or loss arising from the sale of any commodity: thus we say there is 10 per cent. profit or 10 per cent. loss, which is one-tenth profit or one-tenth loss upon the sale of the whole. In the trade of money, it signifies the benefit or interest of any sum of money: thus money is worth 4 or 5 per cent. upon Exchange. But in brokerage, it must be observed that cent. is applied in a different manner. For example, if a broker or exchange agent takes one-eighth per cent. for the contracts made by his interposition, it is to be understood that there is paid to him one-eighth of a pound—2s. 6d. for every £100 negotiated.

CERTIFICATE OF SURVEY is a document given by a surveyor respecting the condition of certain goods submitted to him for examination when the buyer objects to receive them on the score that they are unmerchantable. The surveyor is usually called in when the seller is an agent, as this course furnishes him with evidence to support his own statement of the case to his principal, supposing a loss had been incurred. The certificate is usually in this form:—"I hereby certify that on examination of 100 pieces grey domestics contained in bale marked  310, I found the same damaged by salt water, and consequently I recommend an allowance of one shilling per piece to be made to the buyer. Received the survey fee of one guinea. Signature."

CEYLON, *see* COLOMBO.

CHARTER-PARTY, in commercial law, is the title given to a contract entered into between the owners or master of a vessel and the freighters, when she has been hired to carry cargo from one port to another, or for a certain period in some particular trade. This covenant, which bears a stamp, specifies that the ship is in every respect seaworthy, "and every way fitted for the voyage," and should this prove false, or untrue, through a negligent survey, the owners are liable for whatever loss may be sustained by the hirer They are also responsible for the proper stowage of cargo, and are bound to prepare the ship for sea at the time stipulated in the contract. On the other hand, the charterer is obliged to complete the loading on a given date, and take delivery of cargo within a specified time at the port of discharge (*see* DEMURRAGE). It is necessary to exercise great care in drawing out the charter-party, for an error of an apparently trivial nature may lead to heavy losses on either side. It is well, therefore, to calculate the exact number of days required to land and unload, with a due regard to the means of so doing at the ship's destination. The master must not deviate from the usual course, or touch at any ports not named in the contract, unless through peril, sickness, or in want of stores. He is responsible for the cargo when once on the ship's deck, even if mutiny breaks out afterwards and everything is destroyed, except when damage or entire loss has been incurred through storms and similar dangers of the sea.

CHATTELS *personal* are, properly and strictly speaking, things *movable*, which may be annexed to or attendant on the person of the owner, and carried about with him from one part of the world to another—such as animals, household stuff, money, jewels, corn, garments, and everything else that can properly be put in motion and transferred from place to place.—*Blackstone*, ii. 387.

CHEQUE or CHECK, a written order for the payment of a certain sum of money on presentment. It is generally addressed to a banker, and bears the date when issued, the sum to be paid, to whom payable, and whether to order or bearer. All cheques are charged with a stamp duty of one penny, except those drawn by a banker on another banker for the purpose of settling or clearing any account between each other. *Payment* is made of the sum in the body of the cheque, supposing it differs from the figures in the margin, and in whatever form a legal tender takes. *Crossed cheques* are payable only to a banker, the object of the Act being to compel the holder to make the presentment through "a quarter of known respectability and credit;" in other respects the crossing is simply a memorandum, in no way altering the effect of the instrument. The crossing is nullified by the drawer underwriting the crossing with the words "Pay cash" before he signs the cheque. *Presentment* should be made within a reasonable time, otherwise the person on whom the cheque is drawn may refuse to pay it; a reasonable time being usually understood as "within the banking hours of the day" after the receipt of the cheque: but, according to a high authority, "a man is not obliged to neglect all other business that he may immediately present" a cheque. *Refusal to pay* on the part of a banker, when funds are in the bank belonging to the drawer of a cheque, renders him liable to substantial damages, unless he can show that the funds were not in "his hands for a reasonable time before the presentment." In one case "two hours was held to be more than sufficient" (MacLeod). *Post-dated cheques*, made payable to order, are valid instruments, but if payable to bearer on demand, are void. *Cheques are recovered upon* by the summary mode of proceeding provided in the Bills of Exchange Act, 18 and 19 Vict., c. 67.

CHESTER, county of. *Area*, 707,078 stat. acres. *Pop.* 544,005. *Occupiers of Land*, 13,094; average extent of each holding, 39 acres. Total average under all kinds of crop, 906,980. *Under corn crop.* Wheat, 33,993 acres; barley or bere, 5,280; oats, 47,907; rye, 1,366; beans, 4,210; peas, 433; total, 93,189. *Green crop.* Potatoes, 23,544; turnips and swedes, 1,797; carrots, 139; cabbage, kohl, and rape, 249; vetches, lucerne, and any other green crop (except clover and grass), 960; total, 35,692. Flax, 36 acres; bare, fallow, or uncropped arable land, 2,415. Clover, sainfoin, and grasses in rotation, 64,252; permanent pasture, meadow, or grass, not broken up in rotation (exclusive of heath or mountain land), 311,306. *Live stock.* Horses, 18,589; cattle, 148,284; sheep, 125,294; pigs, 59,261.

CHINESE TREATY PORTS.—CANTON [Chin. *Sang-Ching*, City of Perfection], cap. of the province of Quang-tong, and one of the principal emporiums of the East, stands on the N. bank of the Choo-kiang, or Pearl River, and the E. bank of its affluent, the Pe-kiang. *Lat.* 23° 7′ 10″ N. *Lon.* 13° 14′ 30″ E. *Pop.* 1,245,000. Canton is a wealthy, prosperous, and busy city. In times past the foreign trade was concentrated in the hands of a few; for imports were brought direct from Europe, and sold in large parcels to the dealers, who were men of substance and wealth. Now all this is changed. The colony of Hong-kong has become the market of Canton, where the dealers and brokers purchase what they require, and ship it for the coast places or Canton in junks: and as no reliable record is kept, it is impossible to arrive at even an approximate estimate of quantities and values passing through Chinese hands. Consul Robertson reports that the tendency of the foreign import trade is in the direction of native hands. The Chinese are endeavouring to check the importation of goods by foreigners, and thus keep the trade to themselves. Instances are known where parcels of woollens, in foreign hands, have been found unsaleable, which, on being returned to Hong-kong, were immediately purchased and reimported by Chinese dealers through the foreign Custom House; thus proving that it was not a question of duties, but a combination to keep the trade in native possession. This power of combining, on the part of the Chinese, is one of the most formidable obstacles the foreign merchant has to contend with. The markets for cotton-piece goods, tea, silk—everything, in fact, both of foreign and native trade—are regulated by the guilds, and no single individual Chinese dare act in opposition to their decrees. It is the custom of the trade to take musters of teas to the foreign hongs for inspection, which are examined and tasted, and if approved of, the price is agreed on, on the understanding that the bulk of the tea when delivered will be equal to the muster. All this having been arranged, and the time of the chop's arrival ascertained, the foreign merchant will engage tonnage by some vessel to be on the berth about that period. When the teas come down, however, they are found to be very inferior, badly fired, mixed, and, not unfrequently, all worthless. Unfortunately, foreign merchants have not the power of combining like the Chinese; and competition, the great bane to a sound system of trade, exists to an unlimited degree. In this, of course, consists the security of the Chinese dealers. To throw up the contract would probably entail no loss on them, as the chances are that competition, or whatever else may be the cause, insures a good, and perhaps a better price than the original agreement; but it would seriously injure the foreign purchaser, who, his tonnage having been engaged and advices having gone forward, would be awkwardly placed by the failure of the contract. The brokers, too, who represent the owners, will submit to no deduction, or, if to any, only such as is of little advantage. In the end, the teas go forward, and the results are shown by the advices from home—sold without reserve; got rid of at any sacrifice. The prospects of trade in foreign hands are not likely to improve. That there is an immense trade at Canton there can be no question: but it is in the hands of the Chinese. It is, however, a question of locality; for whether transactions take place in Canton or Hong-kong is, as far as the foreign merchant is concerned, of no great consequence. Indeed, business is more easy and simple at the colony than at Canton. Goods are sold and taken delivery of at the go-downs by the Chinese purchasers, and the trouble of reshipment to Canton, and passing them through the Custom-house, and paying duties on, perhaps, unsaleable merchandise, by which a loss of capital and interest is incurred, is all saved, and much other trouble and expense also. *Value of Trade.* Imports, 12,991,266 dollars in 1868, against 11,487,679 dollars in 1869. Exports, 18,491,156 dollars in 1868, against 20,010,626 in 1869. *Imports: Cotton.* This once important article of import continues to fall off year after year, showing a decrease in 1869 of 78,074 piculs compared with the former one of 1868. The American war first gave the check to the import of Indian cotton, and, indeed, influenced that of the northern native grown; consequently, piece goods came more into use as the native looms became unemployed; and in China, as elsewhere, when the people get accustomed to the use of a fabric or article, they seldom revert to their own manufacture when the pressure is removed. The cotton guild is a close and powerful corporation of traders, and very unwilling to give information. It is well known that they regulate the entire supply, and even the mode of conveyance, also the terms at which it will be passed through the Custom-house, the *modus operandi* being to have cargoes passed at weights below the actual amounts imported, or, in other words, to pay full duties on a manifest representing but two-thirds (or even less) of the true quantity on board. The following comparative table will show the imports of cotton for 1868–9:—

Cotton.	1868.	Value.	1869.	Value.	Increase Value.	Decrease Value.
	Piculs.	Dollars.	Piculs.	Dollars.	Dollars.	Dollars.
Indian .	247,213	4,559,910	169,139	3,257,373	.. ..	1,302,537
Native .	5,017	109,862	3,160	76,671	.. ..	37,191
Yarn ..	28,930	1,305,817	30,690	1,426,521	120,774	.. ..

Cotton piece goods. There is little known about the trade in these manufactures. That it is really very large the numerous piece goods shops in a city of a million of inhabitants affords proof, independent of the greater part of the population being clothed, more or less, in foreign made fabrics. Moreover, large quantities go into the interior, for the supply of the towns and villages of a province as large as the United Kingdom, without passing through or near to Canton. What comes here is imported chiefly in small quantities by the numerous traders who make their purchases at Hong-kong as they require stock; and, as that colony is a free port, and no trade statistics of an official kind are kept, anything like an accurate return, or even estimate, of exports is out of the question. The imports for 1868 and 1869 were:—

Cotton.	1868.		1869.	
	Pieces.	Value. Dollars.	Pieces.	Value. Dollars
Dyed, figured, plain	8,009	31,626	9,520	32,552
Drills, grey ..	6,181	31,308	5,719	27,944
„ damask .	1,001	6,703	1,001	5,252
Handkerchiefs (dozens)	36,958	37,659	33,169	30,650
Printed fancy .	18,554	40,691	12,107	24,893
Shirtings, grey	144,876	344,263	107,159	308,158
„ white	53,936	178,861	63,307	201,702
T cloths	108,884	260,418	99,948	232,623

Nankeens. The importation of this article of native production from the northern provinces, chiefly Kiang-soo, has declined of late, owing to the demand for foreign exportation having all but entirely ceased, and the native consumption considerably lessened. *Metals.* There has always been a fair demand for these (lead, nail, rod, and bar, and quicksilver), and there is no reason for supposing that demand has lessened. *Gin seng.* The trade in this article has declined considerably, owing to the process of clarification being established at Hong-kong, where it is imported and re-exported, free of duty; whereas, if brought to Canton, an import duty would first be levied, and subsequently a coast trade duty, if re-exported to other provinces. There are four kinds of this product. 1. The native, brought from beyond the Great Wall and Manchuria; 2. The Corean; 3. The Japanese; 4. The American. The Manchurean is the finest, but it is scarce, being an Imperial monopoly. *Opium.* Native grown opium has long been, more or less, in the market. It is produced in the provinces of Yun-nan, Szechuen, Kwei-chow, Hoo-nan, Hoo-peh, Kiang-si, Shan-tung, Shan-si, Kan-suh, and also till lately in Kwang-tung. In quality some of it is not much inferior to Malwa opium, but in strength and flavour it is weaker. It varies, however, in different places, that produced in Szechuen being the finest. Smokers prefer the Indian drug, although the price is double that of the native. The import, however, of the Indian article appears to have reached its limits. For instance, the deliveries in 1869-70 were 16,677 chests; in 1839–40, 20,619 chests; in 1849–50, 52,925 chests; 1854–55, 78,354 chests; in 1865–66, 76,833 chests; in 1868–69, 75,458 chests. The price also shows a marked decline. For instance, Malwa opium, in 1865–66, averaged 754 dollars, and is now down to 630 dollars per chest, with a diminished importation; and Patna, which stood at 652 dollars, scarcely touches 530 dollars per chest. *Silk piece goods.* The importation of these fabrics, the production of the northern looms, are intended for native consumption only, as they are, both in pattern and weight, unsuitable for the European markets. *Woollen manufactures.* The kinds in demand are camlets (English and Dutch), flannels, habit medium cloth, lastings, long ells, Spanish stripes, wool and cotton mixtures. This trade is entirely in native hands. *Exports: Tea.* The following table gives the export for seven years:—

	1863.	1864.	1865.	1866.	1867.	1868.	1869.
	Piculs.	Piculs.	Piculs.	Piculs.	Piculs.	Piculs.	Piculs.
Tea, Black ..	135,348	82,163	90,093	74,845	88,978	85,916	74,921
" Green ..	48,000	22,551	18,331	9,295	14,677	10,581	13,540
Total ..	183,348	104,714	108,424	84,140	103,655	96,497	88,461

Silk. The exports of silk, raw and thrown, in 1869 exceeded that of 1868 by 1,200 piculs. There has been a gradual increase since 1864, when the export was only 2,800 piculs against 12,700 in 1869. *Sugar.* The demand for this product is very fluctuating; for instance, the export for 1869 was 20,000 piculs more than in 1868, and 44,000 piculs less than in 1867. *Shipping.* In 1868, 269 sailing vessels, 123,839 tons, entered, and in 1869, 270 vessels, 130,638 tons. *Money.* The tael, the average rate of exchange for the Treaty ports, 6*s* 8*d*. *Weights and Measures.* The picul = 130 lb. avoirdupois, catty= 1 1-3 lb., chang=4 yards. *Bank.* Oriental Bank Corporation; head office, Threadneedle Street, E.C.

CHE-FOO, cap. of the province of Shantung. This port possesses a harbour, which, although exposed in some parts to the north-easterly gales of wind, is nevertheless safe, besides being capacious. There are 150 foreign residents. The value of the import trade amounts to nearly £2,000,000 annually, and the export trade to upwards of £500,000 The value of the Haikwan, or customs' tael, is 6*s* 3*d*. Paper forms one of the principal staples of this port, furnishing return freights to the vessels engaged in carrying the products of the north of China—bran-cake, pulse-oil, &c., to the southern ports; since, with the exception of a small quantity manufactured in this province from the bark of *Broussonetia papyrifera*, and a very coarse description of soft packing paper made from different vegetable fibres, the north of China depends for its supply entirely upon the inexhaustible bamboo plantations of the southern provinces. The silk-producing districts (Ning-hai-Chow, &c.) being in close proximity to this port, Europeans will have little difficulty of coming eventually into closer relations with the growers than at present. In brown silk (the product of the so-called wild or oak-tree silkworm, feeding upon the leaves of the *Quercus serrata* and *Q. mongolica*) there is a large exportation, as this kind is in great favour in European markets, on account of its peculiarly bright lustre and strong fibre. There is, however, a difficulty in imparting to this silk the more delicate shades of colour, owing to the potash and other solvents used by the Chinese in the process of unwinding from the cocoon. Straw braid is an article which furnishes a source of employment and profit to large numbers of the peasantry of Lai-chow Foo, occupying the central portion of the great province of Shantung (on the northern shore of which Chee-Foo is situated). In addition to the braid taken away by foreign demand, enormous quantities are manufactured into straw hats of great size, which go principally to Hankow. The British consul here reports that "the greatest obstacle to any rapid development in the trade of the province lies undoubtedly in its want of means of communication. The eastern half of Shantung is both mountainous and wholly destitute of navigable rivers" Washing for gold is carried on by the natives fifty miles off Che-Foo, but the out-turn so far has been scanty. Coal is found in abundance in the Shantung mountains, but the authorities oppose any attempt to improve the workings.

CHIN-KIANG, a city in the province Kiangsu, on the Yang-tze-Kiang river, is 48 miles E.N.E. Nanking. The custom-house returns show a total in *imports* (gross) during the year 1869 of 7,579,637 Chin-Kiang taels, or £2,305,472 18*s*. 5*d*. sterling, at 6*s*. 1*d*. per tael. This is composed of the divers native imports, 2,310,425 taels; opium, 2,914,776 taels; foreign imports, 2,354,436 taels. As compared with 1868, the total is increased by more than 33 per cent. Foreign imports, including opium, which in 1869 bore a ratio of not quite 22 per cent. to the whole, show 31 per cent., while the actual amount imported of these goods in 1869 is more than double that in 1868. The advance in the sales of grey shirtings in 1868–69 has been nearly 150 per cent.; in T cloths, 296 per cent.; and in woollens 60 per cent. The wonderful rise in the consumption of T cloths is due to their combined cheapness and durability. In the districts to which this port is a feeder, the native cloth sufficient for a suit of clothes costs about 1,900 cash, and lasts two years. The dress of T cloth costs 600 cash, and lasts fourteen or fifteen months. Taking the wear of the latter at its shortest, fourteen months, a simple calculation shows that while 1,000 cash-worth of native cloth will last for twenty-four months, the same value of T cloths will last for twenty-three months, with the advantage of the use of 400 cash for fourteen months. The consumption of foreign sugar has nearly doubled; it now stands at 93,000 piculs. Nail rod iron is also in favour. *Exports*. The very insignificant trade in exports has retrograded, and is lower than it was in 1867. The customs tables indicated a total of 332,913 taels = £101,271, a decrease of £34,000 on 1868, which is more than accounted for by the failure of silk piece goods to the value of £43,000. Raw cotton is practically a forbidden article to foreigners. The Hai-mên and Tung-chow leking officials have established a tax upon the cotton hongs calculated at a certain rate for every bale sold. This they call a "resident merchants' tax," and although it is small, 450 cash per bale, it is just sufficient to decide the question of profit and loss.

Amoy is the port of the province of Fo-kien, on an island of the same name, 35 miles in circuit, in a bay of the China Sea, opposite Formosa, and 320 miles E.N.E. Canton. *Pop.* 250,000. The total value of the imports and exports (including treasure), in foreign bottoms during 1869 exceeded that for 1868 by £442,871. But excluding treasure, in which there has been a decrease to the value of £419,670 during 1869, the returns of the value of general merchandize show an increase to the value of £862,541, &c. The direct trade conducted in British vessels participated in this increase to the extent of £262,245, and the indirect trade shows an increase of £239,762, making a total increase of £502,007. In British shipping entered and cleared there is an increase of 68 vessels and of 36,929 tons. *Imports*. Opium, cotton, cotton goods, metals, beans and peas, &c. *Exports*. Tea, sugar, nankeens, tobacco, gold leaf, &c. There are considerable manufactures of porcelain in this city, and a fair trade is carried on with Formosa. A large opium trade is done at this port. The tea shipped is principally for the American market. The little that finds its way to the English market is usually sent to Foochow and Hong Kong for shipment. Amoy is crushed by the heavy leking taxes, and until these are removed trade will never be in a prosperous condition.

Hankow, an inland port 700 miles up the Yang-tse river. *Lat.* 30° 33' N., *long.* 113° 48' E. *Pop.* about 400,000. This port is a great commercial market. The value of the import trade amounts to nearly £6,000,000 sterling annually. Almost all kinds of Manchester cotton goods are sold at this port, as also woollen fabrics made in Yorkshire; iron, steel, and copper manufactured. The great drawback, however, to the advancement of thi port to its natural position as one of the principal outlets for Manchester goods in the Eas is the very unsatisfactory mode of receiving al imports indirectly from Shanghae. Transshipping charges come very heavy, and whe to these have to be added a high rate of freigh by expensive steamers, it can hardly be believed that charges on plain cottons are 1½ to 2 per cent. in excess of what they would be b direct imports, while on metals the differenc is as much as 7½ to 20 per cent. All advantages of this port are reaped by natives an speculators who make purchases in Shangha for re-sale here, thus creating more middleme between the manufacturer and consumer There is hardly any limit upon the quantity o Manchester goods which might be consume here if such could be imported at a low cost and of good wearing material native cloth i manufactured in the provinces to an enormou extent, and it is estimated that on an averag 50,000,000 lb. of cotton per annum are worke up into cloth The value of the *Export* trad amounts yearly to the enormous sum of abou £4,500,000 sterling, and consists principally o tea, silk, and tallow As regards the former it is at all times difficult to say which brand are the best, as everything depends on the season. Ningchow Oolongs rank high. Th Oonfas are, as a rule, fair teas. The Ningchows and Soonkongs are well-twisted fin teas, marked by a delicate flavour. The Oopacks are often disappointing, as deficient i quality, though handsome in the leaf. Th Liglingo Pong Kongs Kokews, and all othe Oonam teas, have sometimes a tarry flavour which is very unpleasant, and the Seangtam are usually badly made up, and taste coars and old. *Shipping*. Total British and foreig vessels entered in 1869: Number of vessels 286; tonnage, 185,226; number of crew, 1,226 value of cargoes, £4,881,967. *Banks*. Chartered Bank of India, Australia, and China head office: Hatton Court, Threadneedl Street. Chartered Mercantile Bank; hea office: 65, Old Broad Street; Hong Kong an Shanghae Banking Corporation; Branch: 3 Nicholas Lane, E.C.

Tien-Tsin, a city in the province Chi-li and the port of Peking, distant from th capital seventy miles. The value of the imports from foreign countries amounts to abou £400,000 sterling annually. In cotton pie goods a large business is done. These articl are distributed from this port over a vast are of the country, and largely sold; more especially is this the case with English drills (whic have almost driven the American manufacture of that name out of the market) and T cloth which resemble the Chinese home-mad cottons in durability and strength, and a consequently appreciated. The export trad is confined almost entirely to the export o native produce to Hong Kong and the ports, the exports being the transport of t to Russia, and the export of medicines t

Japan. The exports of tea to Russia consist of the leaf and brick kinds.

SWATOW, a town and port on the E. coast of China, 220 miles E.N.E. Canton. Its chief products are sugar, rice, tobacco, and paper. There is a good import trade at this port. In cotton goods, English camlets and Spanish stripes (a narrow habit cloth) are the two descriptions most in demand, and compose the greater half of all woollens imported, the value of the two items alone being over £150,000 sterling. Fancy and dyed goods are not in favour here. The Chinese still prefer wadded garments and coverlets to cloth and blankets to defend them from their winter's cold. The following statement will show the amount of the trade done in cotton goods at Swatow for four years, 1867–70:—

	1867.	1868.	1869.	1870.
	Pieces	Pieces.	Pieces.	Pieces.
Grey Shirtings	64,622	84,669	95,368	99,889
White ditto	14,177	17,323	25,507	39,547
T-cloths	26,016	49,255	48,296	105,450
Drills	4,972	6,234	5,298	20,797

Bank. Hong Kong and Shanghae Banking Corporation; Branch, 32, Nicholas Lane, E.C.

NINGPO, city in the province of Che-kiang. *Pop.* 400,000. The city is six miles in circumference, enclosed by walls twenty-five feet high. It has well-supplied shops, an active trade in junk building, and a manufacture of silk for export to Japan. Tea is the staple export, of which about £1,500,000 sterling worth is shipped annually. Ningpo occupies the sixth position, in respect to the value of its trade, out of the fourteen ports over which the foreign inspectorate extends. The revenue derived from the trade at this port by the Government is considerably more than half of the estimated value of the merchandize imported and exported, exclusive of opium, which is a prohibited article, although from 2,000 to 3,000 chests find their way into the port annually. A large and increasing import trade is done at Ningpo, on account of the favour foreign goods, more especially Manchester cottons, are receiving from the local inhabitants and districts in the interior of the province of Che-Kiang. The principal imports are cotton, rice, and metals.

FOO-CHOW (*Happy City*), cap. of province Fo-kien. *Pop.* 600,000. Tea is the staple export. The qualities may be thus shown: Congou, Souchong, Oolong, Flowery Pekoe, Scented Orange Pekoe, Scented Caper, mixed. The new teas commence to arrive about the middle of May. They are usually imported into England for mixing with tea grown in India, as the latter is a better class of tea, and it improves the strength of the former. The chief imports are opium, lead, and cotton goods. Malwa opium is preferred; and in the following order, Patna, Benares, and Persian drugs. The kinds of cotton and woollen goods in demand, and the average prices paid, may be seen in the following list:—Grey shirtings, 8½ lb., 2 dols. 90 cents, 3 dols., 3 dols. 5 cents, 2 dols. 12 cents, 3 dols. 22 cents; ditto, 7 lb., 2 dols. 72 cents, 2 dols. 80 cents, 2 dols. 84 cents; T-cloths, 7½ lb., 2 dols. 60 cents, without variation; ditto 7 lb., 2 dols. 25 cents, 2 dols. 30 cents, 2 dols. 40 cents, 2 dols. 50 cents; ditto, 6½ lb., 2 dols. 10 cents; ditto, 6 lb., 1 dol. 92½ cents, 1 dol. 95 cents, 2 dols. 5 cents, 2 dols. 10 cents; ditto, mixed, 8 lb., 2 dols. 75 cents, 2 dols. 77½ cents, 2 dols. 80 cents; white T-cloths, 7 lb., 2 dols. 77½ cents; white shirtings, 64 reed, 3 dols. 20 cents, without variation; chintzes, 2 dols. 15 cents, without variation; printed cottons, 2 dols. 15 cents, without variation; long ells, assorted, 7 dols. 70 cents; ditto, scarlet, 7 dols. 55 cents, 8 dols. 30 cents; camlets, 16½ dols.; brocade lustres, 6 dols.; Spanish stripes, 75 cents. per yard. This branch of the export trade rests chiefly in the hands of the native dealers, they procuring the goods at the cheapest of the two great depôts (Hong Kong and Shanghae) and supplying the surrounding districts. They study the fluctuations of the two marts, and conduct their business by means of native agencies, a system which they find more profitable than buying direct from the British importers at Foo-Chow. Regular steam communication exists between this port and Hong Kong and Shanghae.

KEW-KEANG. The total value of the import trade at this port is upwards of a million sterling. Nearly one-third of this amount is represented by opium, rather more than one-third by cotton and woollen goods, and the remainder by sugar, seaweed, lead, tin, raw cotton, &c. The south of the province is supplied with opium, chiefly from Fohkein and Canton, where greater facilities exist for the importation of the foreign drug. Native opium is not sold at Kew-Keang in any quantity; it is, in fact, not much used in the valley of the Lower Yang-tsze. The slight intercourse between this port and the poppy-growing districts, even with those in this province, accounts for the fact that no efforts are made to find a market here for native opium. The navigation of the river above the entrance of the Poyang Lake is impracticable for the larger vessels during almost the whole of the first quarter of the year. The channels in the most difficult portion of the river may be in most winter seasons 8 or 9 feet deep, but they are narrow and shifting. The river rises high between the middle of March and the beginning of August. The principal article of manufacture in this province is china ware.

NEW CHANG, or YING-TSZE city, on left bank of the river Liaou. *Lat.* 41° N., *Lon.* 122° 30′ E., 35 miles by river from Mook-den. The steady increase of trade at this port, the great employment it gives to British shipping, the growing wealth of the population of the three eastern provinces, and the vast quantities of British piece-goods and iron which they demand, all make New Chang a port of considerable interest to merchants and operators at home. *River Liao.* The state of the river from this port to the mouth should receive the earnest attention of all shipmasters, as the north bank has filled up to a very serious extent within the last few years; so much so, that whereas in an Admiralty chart of 1860 the depth is given at 24 feet, there are now many places where a vessel could not draw 17 feet. *Imports.* This trade was considerably smaller in 1869 than in 1868, much more having been bought than was required. The figures were:—1868, total imports, taels 5,073,757=£1,691,152; 1869, total imports, taels 2,261,600=£753,866. The most noteworthy features of the trade were the enormous increase in the consumption of iron, in that of drills, and the decrease in that of grey shirtings. With regard to drills, it is still further worthy of notice that in 1868 24,382 pieces of English were imported, against 20,284 American and 4,101 Dutch. Now, in 1869, English drills have declined, being 17,827 pieces, against 35,406 American and 18,240 Dutch. The amount of iron imported at this port in 1869 was greater than the consumption of all other ports together (Shanghae excluded), for the year 1868, by 4,116 piculs, the amount being 11,666,627 lb. How long this part of China will continue to take such quantities of iron no one can say; but it is strange to see iron pouring into a country full of iron, full of coal, and with a population a large portion of whom live in enforced idleness for nearly four months in the year, simply because they cannot work the mines properly themselves, and the Government refuses to allow others who can to do so, with and for them. *Exports.* This trade in 1869 summed up taels 3,720,890, against taels 1,591,619 in 1868, and taels 2,434,146 in 1867. The principal business done is with Hong Kong and Chinese ports. That with foreign countries is exclusively confined to the importation of pulse and oils. Of the former, about half a million sterling worth was shipped in 1869; and of the latter, about £40,000 during the same year. *Shipping.* 359 British and foreign vessels entered at this port in 1869, aggregating 113,774 tons, and carrying cargoes worth £1,240,096.

STATEMENT SHOWING THE PROGRESS OF THE TRADE IN DIRECT EXPORTS FROM THE UNITED KINGDOM TO CHINA, FROM 1840 TO 1869.

1840	Over £500,000	1850	£1,750,000	1860	£4,250,000
1841	750,000	1851	Over 2,000,000	1861	4,250,000
1842	1,000,000	1852	2,500,000	1862	Over 2,000,000
1843	Nearly 1,500,000	1853	1,750,000	1863	Nearly 3,000,000
1844	Nearly 2,500,000	1854	1,000,000	1864	3,500,000
1845	Nearly Ditto	1855	1,250,000	1865	4,500,000
1846	1,750,000	1856	2,250,000	1866	6,500,000
1847	1,500,000	1857	2,500,000	1867	6,000,000
1848	Nearly 1,500,000	1858	3,000,000	1868	7,500,000
1849	Over 1,500,000	1859	4,250,000	1869	Over 8,000,000

1843-4. Five Ports opened. Overtrading. 1853-55. Taiping Rebellion. 1858-59. Treaty o Tientsin. 1859-62. Japan and New Ports opened. 1861-2. American War.

CHINCHEW, the name the Chinese give to sugar candy.

CHINCHILLA, a remarkably soft, beautiful fur obtained from the *Chinchilla Lanigera*, a South American rodent.

CHINE, worsted, cotton, silk, and linen manufactures with printed warps.

CHINSING, a temporary stopping up a ship's seams with oakum.

CHINTZ, a variety of printed calicoes, in which the figure has several colours. They are usually worn in this country as morning dresses for ladies. They are produced in Manchester and Glasgow.

CHITARAH, a stuff made in Turkey of a mixture of cotton and silk.

CHITO, a kind of cotton stuff made in Spain.

CHLOROFORM, an instrument for determining the relative discolouring value of samples of bleaching powder.

CHO'CA, a mixture of coffee and chocolate.

CHOCOLATE, prepared cacao beans, afte being pulverised, flavoured with sugar an other ingredients.

CHOKA, one of the Hindustani names fo rice.

CHOP, a trade term in China for the entir bulk of a certain kind of tea brought to marke

CHUMBALEE, the Eastern name for th essential oil of Jasmine.

CHUNAM, the lime made in India from se shells.

CINCHONA (so named from the Countess de Cinchon, the lady of a Spanish viceroy, whos cure is said to have brought the Peruvia bark into reputation). The cinchonas ar trees. The branches are round, except at th top, where they are obscurely three-cornere The flowering branches are alternately compressed. The leaves are opposite, undivide the exportation was respectively 12,748,000 and 13,212,000 tons. The importance of these figures appears by comparison with the total out-put, 123,386,758 tons. The rise began towards the end of 1871, and reached its highest point at the beginning of 1873. The average prices of six qualities of coal at the Manston collieries, in West Yorkshire, at the pit's mouth, was, in 1871, 5*s.* 8*d.*; in 1872, 9*s.* 5*d.*; in 1873, 13*s.* 1*d.* The price at Pease's Adelaide colliery, in Durham, was 7*s.* 5*d.* in 1870; 13*s.* in 1871; and in June, 1873, 15*s.* These prices were for all qualities of coal. The wholesale prices in London of the best household coal were, in 1870, 18*s.* 6*d.*; in 1871, 19*s.* 3*d.*; in 1872, 24*s.* 11*d.*; in 1873, 33*s.*; the highest price being 45*s.* The highest price of coke for the iron trade, put in truck att he oven at Durham, was, in 1870, 12*s.* 6*d.*; in 1873, 42*s.* 6*d.* In addition, coal which was practically unsaleable before has found a brisk demand at from 7*s.* 6*d.* to 12*s.* 6*d.* At first it might be thought remarkable that prices should rise to such a level, while the coal-fields were so well stocked, but, considering that the demand and production were rising annually five per cent., with the whole world for a customer, and the supply came from a comparatively limited area, a limited population, and a still more limited class of workmen, it can be a matter of no real surprise. The rise was certain to come sooner or later. Little was wanted to start the upward movement. The men, finding pressure put upon them, made new and larger combinations, with a view to more wages and less work As prices rose they asked their share. Then came Parliament with its humane interference, regulating the employment of boys, the qualifications of the managers, and the ventulation of the mines. It appears that fourpence or sixpence a ton is the utmost that can be set down to this cause. But the masters were justified, they thought, in laying this tax on the public, and, as usual, they did so with interest. All at once prices jumped up 3*s.* per ton. Then came a panic. Strikes, foreign demand, the increasing consumption by the iron trade, legislation, all contributed to this result. The public began to lay in stocks, and overwhelmed the dealers with orders. This was to throw everything in the hands of the coal merchants, coal-masters, the pitmen, and the railway companies. All these interests doubled the price of coal. If the pitmen could be multiplied, no doubt a fall might be likely to take place, but it appears that the four-hundred thousand of all classes engaged in or at the pit's mouth cannot be increased for years to come. It takes a whole life for a miner to become a real adept at "holing," which is the most difficult part of his work. It takes several years for a labourer to learn "hewing," and even then he cannot do it as well as if he had learnt from a boy. Machinery may economize, but it will not much increase the work done, and will require great skill. Besides, it usually takes years to sink a mine. Now are the various classes concerned in the production of coal not unwise in checking consumption by their extortionate demands? Coal-masters and pitmen depend on manufacture and trade, and they are frightening it away. Our continental neighbours, and now our friends across the Atlantic, are taking advantage of the increased costs we are at by our coal dearth, and are beating us out of the market.

Coal Exchange, a central market in London, near Billingsgate, where the wholesale coal business of London is carried on. The members are principally coal-factors, sailing masters, &c.

Coasting, that part of navigation where the places assigned are not far distant, so that a ship may sail in sight of land, or within soundings, between them. In this there are only required a good knowledge of the land, and the use of the compass and lead, or sounding-line. The tonnage of the vessels employed in our coasting-trade in the year 1871 shows an increase over the preceding year. The tonnage of the vessels so employed, entered with cargoes at ports in the United Kingdom in 1871, was 18,359,099, and of vessels cleared with cargoes, 18,367,201; the former number showing an increase of 93,473, and the latter of 126,457 tons. The increase was almost wholly in the intercourse between Great Britain and Ireland; in that trade the vessels entered in 1871 had a tonnage of 6,939,828, and the vessels cleared, 6,790,911; the entries inwards showing an increase of 94,762, and the clearance outwards an increase of 109,230 tons.

Coats, in a ship, are pieces of tarred canvas put about the masts at the partners, to keep out water. They are also used at the rudder's head, and about the pumps at the decks, that no water may go down there.

Cobalt [Ger. *Kobalt*, Du. *Kobald*, Da. *Kobold*, Sw. *Cobolt*, Fr. *Cobalt*, It., Sp. and Port. *Cobalto*, Rus. and Po. *Kobolt*, Lat. *Cobaltum*], a ponderous, hard, fossil substance, almost black, emitting a strong sulphureous smell when burnt, often mixed with copper, and sometimes with silver. Cobalt is frequently used to restore whiteness to linen cloth which has been soiled, and to colour porcelain

Cocoon, the nest formed by the silkworm as its embryo or chrysalis, which is a hollow envelope of a light tissue-like texture, from which the silk of commerce is obtained in one continuous thread of two filaments, agglutinated by a gummy liquid. Each cocoon yields about 300 yards of silk, and 250 average-sized cocoons will weigh about 1 lb.—*Simmonds.*

Cochenilla-wood, a handsome furniture wood which comes from St. Domingo, and is procured from the heart of a tree which grows there.

Cod Liver Oil is obtained from the liver of the common cod.

Coffee [Ger. *Kaffee*, Fr. *Café*, It. and Port. *Caffè*, Sp. *Cafe*]. There are ten species of the shrub which yield the well-known berries; but that which is most esteemed is supposed to be a native of Arabia. The *Caffea Arabica* seldom rises more than sixteen or eighteen feet in height. The main stem grows upright, and is covered with a light brown bark. The branches are produced horizontally and opposite, crossing each other at every point. The leaves also stand opposite, and, when full grown, are about four or five inches long and two broad in the middle, decreasing towards each end, and the borders are waved, and the surface is of a lucid green. The flowers are produced in clusters at the root of the leaves, sitting close to the branches. They are tubulous, and spread open at the top, where they are divided into five parts. They are of a pure white, and have a grateful odour, but are of short duration. The fruit, which is the useful part, resembles a cherry. It grows in clusters, and is ranged along the branches under the axillæ of the leaves, of the same green as the laurel, but longer. When it becomes of a deep red it is gathered and prepared for exportation. Coffee is now cultivated to a great extent in India, Ceylon, Java, Brazil, and the West Indies. In the first of these countries it is grown in sheltered situations, amongst the hills of Wynaad and Coorg, at a height of from 3,000 to 4,000 feet above the sea. When the ground is selected, it is cleared from timber and grass by the axe and fire, and when sufficiently free, young shrubs from the nursery-beds are planted in rows from the valley to the face of the surrounding hills. These are kept free from jungle-grass until the third year, when the first crop of ripe berries is gathered, and placed in a machine which removes the pulp or outward covering, leaving a small, greenish substance, and this, when dry, splits in two tough oval parts or beans, now ready for the market. The tree is not allowed to grow beyond six to seven feet, and consequently it spreads so much over the soil as to look, when old, almost flat and round. The average yield per acre when the the trees bear is 1 cwt., but this goes on increasing until, as is the case in some parts of Wynaad, twenty times that quantity may be obtained. Very little Mocha coffee ever finds its way westwards from Constantinople. Europe derives its supplies almost entirely from Ceylon, British India, and Brazil. In selecting coffee, choose a middling-sized, unbroken, plump bean of a greenish hue, free from a disagreeable smell, and which is heavy enough to sink rapidly in water. The following statement shows the computed real value of the coffee imported into the United Kingdom for the five years 1865-69:—1865, £4,600,887; 1866, £4,089,329; 1867, £4,362,760; 1868, £4,858,107; 1869, £4,927,405.

COHONG, the name the Chinese give to a company.

COIR is one of the many products of the cocoa-nut palm tree. It is the short fibre obtained from the covering of the nut, and used in the manufacture of matting, cordage, &c. That from the islands of Kadamat, Kiltan, and Chetlat, in the Laccadives, is the best produced. In these islands coir is one of the principal commodities of barter for rice, salt, and tobacco. The nuts are small and fine, and do not produce as much material as the coast nuts, but of a longer and better quality. Three large coast nuts will yield 6 lb. of coir, measuring twenty-two fathoms; whereas ten island nuts go to about 1 lb., but this will measure thirty-five fathoms: 2 lb. of such yarn, measuring from seventy to seventy-five fathoms, are made up into sooties, of which there are fourteen to a bundle, averaging about a maund of 28 lb. A Mangalore candy of 560 lb. will thus be the produce of 560 nuts, and should contain about 20,000 fathoms of yarn. The actual price received by the islanders is about thirteen rupees (26*s.*) per candy. They export from 300,000 to 400,000 nuts annually.

COLOMBO, the modern capital of Ceylon, on the S.W. coast, *lat.* 6° 56′ 6″ W., *long.* 79° 49′ 48″ E., *pop.* about 45,000. Colombo is the seat of government, and the chief mart of the island. Its harbour is small, and capable of receiving only small vessels, larger ones being forced to remain at anchor in the roadstead. The fort is almost surrounded by the sea, being built on a peninsula projecting into it. Climate varies from great moisture in the S.W. to great drought in the N.E. monsoon. As a station it is so far inferior to Trincomalee that it has lost much of its former importance. *Ceylon, extent, population, revenue, &c. Revenue*, 1870, £1,091,606; 1871, £1,121,679. *Expenditure*, 1870, £1,026,870; 1871, £1,064,184. *Pop.* 2,128,884; *area*, 24,454 square miles. *Trade and industry.* "The declared value of the total imports and exports of the colony, including bullion and specie, in each of the five years, 1867 to 1871, was as follows:—

Years.	Imports.	Exports.
1867	£4,504,339	£3,530,225
1868	4,403,177	3,786,722
1869	4,635,023	3,631,065
1870	4,634,297	3,803,730
1871	4,797,592	3,634,853

The commercial intercourse of Ceylon with the United Kingdom is shown in the subjoined tabular statement, which gives the total value of the exports from Ceylon to Great Britain and Ireland, and of the exports of British and Irish produce and manufacture into Ceylon in each of the five years 1867 to 1871:—

Years.	Exports from Ceylon to United Kingdom.	Imports of British Home Produce into Ceylon.
1867	£3,224,512	£771,879
1868	3,671,494	828,483
1869	3,749,783	796,371
1870	3,450,974	908,415
1871	3,167,673	928,807

The staple article of export to the United Kingdom is coffee, of the declared value of £2,614,060, in 1867; of £2,986,479, in 1868; of £2,867,724, in 1869; of £2,790,898, in 1870; and of £2,620,263, in 1871. Besides coffee, the only other exports of note are cocoa-nut oil and raw cotton, the former amounting to the value of £[illegible],316, and the latter to £56,047 in 1870. Manufactured cotton goods, of the value of £[illegible],105 in 1871, form the staple articles of British imports into Ceylon. *The Money, Weights and Measures* of Ceylon are the same as those of the United Kingdom. The money of the country is the rupee of British India (2s.). Accounts are kept in rupees and cents."—*Statesman's Year Book.*

Banks of Colombo.—Bank of Madras: agents, Bank of England, Chartered Mercantile Bank, H.O., 65, Old Broad Street, E.C.; London Chartered Bank of Australia, Branch, 88, Cannon Street, E.C.; Oriental Bank, H.O., Threadneedle Street, E.C.; the National Bank of India, H.O., 89, King William Street, E.C.

COMMERCE. An account showing the amount of the imports into and the exports from the United Kindom, stated in real value in each year, from 1854 to 1870 inclusive:—

	REAL VALUE.			
Years.	Imports.	Exports.		
		Produce and Manufactures of the United Kingdom.	Foreign and Colonial Merchandise.	Total Exports.
	£	£	£	£
1854	152,389,053	97,184,726	18,636,366	115,821,092
1855	143,542,850	95,688,085	21,003,215	116,691,300
1856	172,544,154	115,826,948	23,393,405	139,220,353
1857	187,844,441	122,066,107	24,108,194	146,174,301
1858	164,583,832	116,608,756	23,174,023	139,782,779
1859	179,182,355	130,411,529	25,281,446	155,692,975
1860	210,530,873	135,891,227	28,630,124	164,521,351
1861	217,485,024	125,102,814	34,529,684	159,632,498
1862	225,716,976	123,992,264	42,175,870	166,168,134
1863	248,919,020	146,602,342	50,300,067	196,902,409
1864	274,952,172	160,449,053	52,170,561	212,619,614
1865	271,072,285	165,835,725	52,995,851	218,831,576
1866	295,290,274	188,917,536	49,988,146	238,905,682
1867	275,184,137	180,961,923	44,840,606	225,802,529
1868	294,693,608	179,677,812	48,100,642	227,778,454
1869	295,460,214	189,953,957	47,061,095	237,106,325
1870	303,296.082	199,640,983	44,493,755	244,134,738

In 1720–1, when the South Sea Bubble burst, the real power and mischief of commercial panics became fully recognized, and since then we have had only too much reason for dreading their visitations. In the year of the Pretender's advance southward, 1745, with his army of wild Highlandmen, of whose terrible doings the most extravagant stories were told and believed, a panic began, which culminated on the 5th of December, when it was known in London that the "rebels" were at Derby. Then the City of London became filled with terror and consternation, many of the inhabitants fled into the country with all their most precious possessions, and most of the shops were shut up. The Three per Cents. fell to 76, although in '37 they had reached the unequalled price of 107, and even the Bank only escaped ruin by a stratagem hardly to be considered creditable, although thereby the Bank preserved its credit. Payment was not indeed refused; but as those who came first were entitled to priority of payment, the Bank was filled with its own agents, who presented notes which they desired should be paid in sixpences in order to gain time. These agents went out at one door with the specie which they received, and brought it back by another. The yachts of King George were prepared for a hurried departure, and his prudent Majesty's most precious effects were embarked in them, while trade was at a standstill. These panics were, however, less genuine than was that of 1792–3, which occurred at a time when commercial prosperity was at its height, and all branches of trade were active, and when the country had enjoyed peace for a period of ten years. On the 20th February, 1793, the startling news spread that on the previous day the Bank had been unable to discount the paper of Messrs. Lane, Son, and Fraser, and that they had stopped payment for a million. The panic then set in. Soon after a hundred country banks stopped payment, and the commercial disasters followed thick and fast until the amount of distress in the country was such as had never before been known. The Government issued £5,000,000 Exchequer Bills to relieve the pressure, and in returning confidence a remedy was found. Another panic arose in that gloomy year of war and rebellion, 1797, which resulted in an issue of £1 and £2 notes to meet the terrible want of specie. A long period of unexampled prosperity ushered in the dreadful panic of 1825–6, when the Bank of England had the greatest difficulty in maintaining the storm; and the wonder was, not when this or that large firm broke up, but how one contrived to escape the smash. The terror and distress may be imagined, when we add that persons with £100,000 could not command £100 to save themselves from ruin. People made the most extravagant purchases of goods merely to get rid of country bank-notes; the demand for gold was extraordinary, and "the gold of the Bank was drained to within a very few thousand pounds." On the 16th December the Government intervened, and gave permission for the re-issue of £1 and £2 notes. This step, and the appearance—carefully made—of gold existing in abundance, despite the panic, at length caused it to subside, but not before it had caused an amount of misery and destitution awful even now to contemplate. Alderman Key's panic of 1830, and the stock-jobbing panic of 1836, were much less serious, nor was that of 1837—although bad enough—to be compared with the frightful panic of 1825. After the panic of 1837 a lengthened period of adversity followed, which did not show signs of brightening until 1844. In the year 1847, the great panic, consequent mainly upon extravagant railway speculations, set in. Failures followed failures in rapid succession all over the country. Some of the first mercantile houses in London, Manchester, and Newcastle, in Wales and in the West of England, succumbed to the shock. On the 28th of October, the Government came to the rescue, instructing Bank directors to enlarge their discounts and advances on approved security, at not less than 8 per cent interest, and undertaking to provide an indemnity in the event of this course leading to any infringement of the law. Although the pressure continued, the Funds then proceeded to rise. The failures in London alone during the month of November were estimated at not less than a million, but the storm was nearly over by the end of that month. In the year of the outbreak of the mutiny in India, viz., 1857, came another panic, known as the American panic. On the 11th of November it was known that the Western Bank of Glasgow had stopped for £6,000,000 or more. The next evil news was the suspension of Sanderson, Sanderman, and Co., a large discount firm, with liabilities amounting to £5,500,000. The bullion in the Bank diminished to £7,000,000, and the notes in circulation represented £21,000,000, their private deposits to £13,000,000, and the private securities to £26,000,000. With but £7,000,000 to meet possible demands of £60,000,000, the alarmed directors appealed to the Government, and received permission, under promise of indemnity, to issue notes not exceeding £2,000,000; and notes to the value of £900,000 actually were issued. With the return of gold from Scotland and Ireland the tide turned. Money began to be offered in the market on easier terms, and Funds rose. But failures continued, and the results were most disastrous, affecting every branch of trade, and spreading ruin far and wide. In New York the panic was described as a financial earthquake, which shook the moneyed institutions of that country to their centre; one fell after another. In two hours eighteen New York banks stopped. The Mississippi steamers ceased to run, because there was nothing wherewith to pay the wages of the crews. The next panic was that which occurred in 1866, and it is known as the great credit panic, because it was occasioned mainly by an undue extension of credit. On the 11th of May—known as Black Friday—Overend, Gurney, and Co. suspended payment, with liabilities in excess of any previously realized, viz., £5,000,000, at first stated to be £18,000,000. The panic followed immediately. The most terrifying reports spread with the utmost rapidity, and Lombard Street was besieged with people. The English Joint Stock Bank was the next failure, and it soon became known that the great contractors, Peto, Betts, and Co., had been forced to request the indulgence of their creditors. The Bank rate became 9 per cent., and the reserve of notes was reduced to £730,000. To restore the public confidence, the Government, after a brief delay, suspended the Bank Charter Act, on condition that the minimum rate of discount should be 10 per cent.

Comptant [French], cash specie, the circulating medium.

Comptoir [French], a counting-house or factory, sometimes a shop counter.

Contango signifies on the Stock Exchange a sum of money paid for accommodating either a buyer or seller by carrying the engagement to pay money or deliver shares over to the next account day.

Consols (Three per Cent.), *or Consolidated Annuities*, is the title given to certain government stocks which were consolidated in 1751. This stock, through the funding of subsequent loans, amounted, on the 31st March, 1868, to £395,489,459, bearing interest at the rate of three per cent. Dividends due Jan. 5 and July 5. Closing prices on the 2nd Dec., 1871, 93¾ to 93⅞ for money, and 92⅝ to 92¾ ex div. for the January account.

Copper [Fr. *Cuivre*, Ger. *Kupfer*, It. *Rame*], a well-known metal, one of the most anciently known of all the metals. It is abundantly diffused in nature, being found native as an oxide, a sulphuret, and as a sulphate, carbonate, arseniate, and phosphate. It has a disagreeable smell, which is more sensible when it is rubbed or heated; its taste is styptic and nauseous, though less perceptible than that of iron; it is hard, very elastic, sonorous, ductile, and capable of being reduced into exceedingly thin leaves or fine wire. Alloys of copper are numerous and of great value. Those of tin are of most importance. The British copper mines are in Cornwall, Devonshire, Wales, &c. Welsh copper is exported largely to Egypt and India, and in the shape of bottoms realizes in Liverpool about £60 per ton. The value of our export of ingots, cakes, and slabs, wrought sheets, nails, bars, and rods, mixed or yellow metal, other sorts, is about £3,000,000. *Foreign copper* ores are abundant in Sweden, Russia, Chili, Cuba, Bolivia, &c.; also in Persia, Sumatra, Borneo, and Japan. Copper ore in the form of a sulphuret is abundant in Ramgush, in Shekawattie; near Ajmeer the carbonate of copper is found in small veins, and in connection with ores of iron. A silicate of copper ore occurs in Nellore Collectorate, but not in workable lodes. The copper found in Japan contains gold in alloy; it comes to the market in small red bars 6 inches long, flat on one side and convex on the other, weighing 4 to 5 lb. each.

CORAL [Fr. *Corail*, Ger. *Korallen*, It. *Corale*]. There are several varieties, of which the black is highly esteemed, and the red next; yellow and white corals are also met with. The value of coral depends upon its size, solidity, and the depth and brilliancy of its colour. Coral is found in great abundance in the Red Sea, the Persian and Arabian Gulfs, in various parts of the Mediterranean, on the coasts of Sumatra, Japan, &c. Coral is brought to China from all the islands of the Indian Archipelago in native vessels, and is there wrought into ornaments.

CORFU, one of the Ionian Islands, is in *lat.* 38° 40′–39° 40′ N., *long.* 19° 10′–20° E. *Area*, 227 square miles. *Pop.* in 1863, 73,563. *Exports.* Chiefly oil, soap, fruit, spirits, liquorice. *Imports.* Cereals, leather, petroleum, coffee, sugar, timber, coal, cotton and woollen goods, salt and dried provisions, manufactures in metals, &c. Since the beginning of 1866 trade has decreased on account of the changes wrought by the cession of the island to the kingdom of Greece, and the diminished resources of the native population. The total value of imports and exports for the years 1866 to 1869 inclusive shows an average of £400,102 for each year, against the returns in 1865, which amounted to £529,756, thus exhibiting an average decrease of £129,654 per annum. *Coal.* The quantity imported yearly is estimated at about 20,000 tons. This article is admitted free. *Oil.* 72,000 square acres are planted with olive trees in the island, and the average crop is put down at from 100,000 to 120,000 barrels of oil, valued at from 12 to 14 dollars per barrel, free on board. *Wine.* The estimated production during 1869 amounted to 50,000 barrels of 16 imperial gallons, valued at 16*s.* 8*d.* per barrel. Average production before the vine disease, 75,000 barrels. *Duties.* On silks, and objects of luxury, 25 to 50 per cent.; on other articles, from 10 to 15 per cent., *ad valorem*, with an additional tax of 3 per cent. for municipal purposes; on exports, 1½ per cent. *Shipping* returns show an increase since 1865 of 1,440 vessels, or an average of 360 per annum, which is attributable to the large number of coasting craft, under 20 tons, sailing to and from this port, and not in previous years included in the official returns. *Money* accounts are kept in English money, Spanish dollars, and oboli. 104 oboli = 1 Spanish dollar = 4*s.* 4*d.* Course of Exchange, 51¾*d.* per Spanish dollar. *Weights and Measures.* English, with Italian denominations. Libbra sottile, the pound troy; libbra grosso, the pound avoir.; centinajo, 100 libbre. Dicotoli, English pint; the chilo, the bushel; the barile is 16 gallons; the stadio is the chain.

CORK [Fr. *Liége*, Ger. *Kork*], the outer bark of a species of evergreen oak, abundant in Portugal, Spain, Italy, and the South of France; also in other countries. It is light, porous, compressible, and elastic.

CORNELIAN [Fr. *Cornaline*, Ger. *Karniol*, It. *Cornalina*], a precious stone, of which there are three kinds, distinguished by three colours—a red, a yellow, and a white; it is found in roundish or oval masses, much like our common pebbles, and is generally met with between an inch and two or three inches in diameter. It is of a fine compact and close texture, of a glossy surface, and in the several specimens is of all degrees of red, from the palest flesh-colour to the deepest blood-red. The pieces of cornelian which are all of one colour are those which our jewellers generally make use of for seals, though the variegated ones are much more beautiful. This stone is tolerably hard, and capable of a good polish. It is not at all affected by acid menstruums; the fire divests it of a part of its colour, and leaves it of a pale red; and a long and strong continued heat will reduce it to a pale dirty grey.

COTTON [Fr. *Coton*, Ger. *Baumwolle*, Dan. *Bomuld*, Du. *Boomwol*, *Katoen*, It. *Bambagia Cotone*, Port. *Algodas*, Sp. *Algodon*, Sw. *Bomull*, Arab. *Kutun*, Hind. *Ruhie*, Guz. *Kapoos Ruhie*, Mal. *Kapas*, Rus. *Chlobtschataja-bumaga*, Pol. *Rawelua*, Sans. *Kapasa*, Lat. *Gossypium Bombax*], the hairs attached to the seeds of *Gossypium herbaceum*, and other species of the *genus Gossypium* or Cotton. It is to be found growing in all the tropical regions of Africa, Asia, and America, and it has become one of the most important objects of cultivation in the Southern States of America, India, and Egypt. In its unmanufactured condition it may be described as a sort of wool which bears value according to the colour, length, strength, and fineness of fibre. Pure whiteness is generally held to denote a secondary quality; whilst a yellowish tinge, provided it be not the result of casual exposure to damp, or the natural effect of an unfavourable season, is indicative of superior firmness. Many varieties of raw cotton are in the market, each sort being usually distinguished by the name of the locality where it is produced; but the main distinction recognised is that between the long and short stapled qualities, though of these again there are different degrees of excellence. The "Sea-island" cotton of Georgia is esteemed the best of the long-stapled kind. It was raised on the coast in 1786, and it was exported two years after. The seeds were obtained from the Bahamas, the plant having been introduced there from Anguilla, one of the Leeward Isles. It is of the arborescent kind, and limited in its range to a narrow belt along the coast of South Carolina, south of the Santee River, and to the low sandy islands near the mouth of the Savannah River. The "Upland" produce of Georgia excels among the short-stapled classes. Bowed and Orleans cottons constitute the principal productions of the United States, and are recognised among buyers as "American Cotton." The great Valley of the Mississippi is the field in which they are produced. In the Liverpool market they are known separately as Orleans, Mobile, and Uplands. Egyptian cotton has long been esteemed as next to the Sea-islands' in quality. Its culture was first introduced in that country in 1821, and it has since been successfully prosecuted and greatly extended, so that England now draws thence a certain portion of its supplies. The quantity, however, is very uncertain, the fluctuations being extreme and beyond calculation. Brazil is an extensive cotton-growing country, and sends steady supplies of it to the European markets. The quality is valuable, long-staple, a crop of which has proved much more important, and the export of cotton from this country in the early part of the present century often exceeded that of any other, excepting the United States. The names by which Brazilian cotton is known in the Liverpool market are Pernam, Maranham, and Maceio. Persia, Spain, Italy, Malta, and the adjacent countries are all capable of producing excellent cotton; but a great authority points to Africa as containing greater undeveloped resources for the cultivation of cotton than can be found in any other portion of the globe. The most extensive cotton-growing country after the United States is India. The plant is indigenous to the soil, and the culture and manufacture have existed from the days of antiquity. From the following table it will be seen how important a place India occupies among cotton-growing countries. The average weekly consumption for the whole of Europe is about 73,000 bales per week, or 3,800,000 bales per annum. It has been as high as 78,000 bales per week, or 4,056,000 bales per annum. This demand is met as follows (taken approximately):—America sends about 1,500,000 bales, India 1,700,000, Egypt 250,000, Brazil 300,000; other countries 350,000; total, 4,100,000 bales. *Indian Supplies* are made up in the following way:—Calcutta and Tinnivelly 425,000 bales; Surat, Broach, &c. 100,000, Dharwar and Koompta 150,000, Khandeish 75,000; total, 385,000 bales. Dhollera 250,000 bales, Kattywar 100,000, Verawul Cutch, &c. 150,000, Kurrachee 70,000, the Central Provinces and the Berars 250,000, Aizams Country 50,000, Central India 50,000, Sundries 30,000; grand total, 1,700,000. The supplies that reach Europe are known first, under the head *Surat*, Hingenghaut, Ginned Dharwar, Broach, Broach Machined, Ginned Dhollera, Oomrawuttee, Coomptah Verawul. And under the head *Madras*, Tinnivelly and Western. The other distinctions are Scinde and Bengal. Dharwar and Hingenghaut are the two finest staples, and run one another very closely as regards price. The latter, however, is considered by experienced buyers as the very best quality in India, and not inferior to "middling Orleans." "When I am at liberty to choose in Bombay," says one gentleman, "to my judgment, the best quality of cotton for manufacturers, I always give the preference to Hingenghaut. If none can be obtained of that description, I choose Oomrawuttee, which is generally preferred in France to Dharwar saw-ginned." Upon samples of exotic cotton, produced in the Wurdah Valley and sent to Liverpool and London, the following opinions were pronounced: — *Liverpool Opinion.* — "The colour of all the cotton is very good, but the staple is too much cut, especially the bales of Takulkaree, Nagholee, and Burhurree fields. We think the cotton is over ginned. The bales from fields Kootkee and Nagrana come very near American cotton, and cotton of this description would have ready sale in this market. The colour is everything that could be wished, the staple is the only fault." *London Opinion.*—"Good fair to good saw-ginned Surat cotton, bright, very white and clean, fair staple. Fields Nagjurree and Wagholee slightly inferior to the other samples, and are not quite free from seed and a little leaf. On the whole the staple is rather weak (the consequence of over ginning), and cannot be compared to the superior qualities of saw-ginned Dharwar, which, however, are deficient in colour and clearness. Probable value, 11*d.* to 11½*d.* per lb. Broach Comptah and Verawul cotton are lower in qualities than those previously mentioned, but they serve for mixing."

Weight of	Bombay	bale,	394	lb. net	cotton.
,,	Madras	,,	300	,,	,,
,,	Bengal	,,	300	,,	,,
,,	China	,,	240	,,	,,
Weight of	American	bale,	440	lb. net	cotton.
,,	Brazil	,,	180	,,	,,
,,	Egypt	,,	500	,,	,,
,,	Turkey	,,	350	,,	,,

Statement showing the average yearly imports of cotton into Great Britain, and consumption and exports of cotton to foreign countries for seven years, from 1861 to 1867:—

	Average in bales.
East Indian	1,329,325
American.....................	727,632
Other kinds	658,074
Total Imports into Gt. Britain	2,715,031
Total Exports from Gt. Britain	811,122
Consumption in Gt. Britain ..	1,903,909

The Central Provinces and the Berars supply about one-fifth of the cotton exported from India, or about enough for four weeks' consumption of Europe.

IMPORT OF COTTON INTO LIVERPOOL AND LONDON TO 26TH OCTOBER.

	American.	E. India.	Brazil, Egyptian, &c.	Total.
1871	1,967,400	975,100	608,700	3,5
1870	1,326,500	928,100	555,800	2,8
			Increase of Import, 1871	800,

EXPORT OF COTTON FROM LIVERPOOL AND OUTPORTS TO 26TH OCTOBER.

	American.	E. India.	Brazil, Egyptian, &c.	Tot
1871	285,800	255,300	65,800	606,9
1870	105,100	197,300	50,600	35
			Increase of Export, 1871	254,

STOCK OF COTTON IN LIVERPOOL 26TH OCTOBER.

	American.	E. India.	Brazil, Egyptian, &c.	Tot
1871	134,100	279,300	105,500	518,9
1870	75,700	324,900	108,900	509,
			Increase of Stock, 1871	9,

LONDON STOCK AND DELIVERIES TO 26TH OCTOBER.

		Stock.	Deliveries for Consumption.	Expo
1871	All kinds	118,700	43,100	154,9
1870	,,	42,600	82,100	120,

STOCK IN HAVRE.

29th October, 1871	119,
,, ,, 1870	91,

DELIVERIES FOR CONSUMPTION FROM LIVERPOOL AND LONDON TO 26TH OCTOBER.

	American.	E. India.	Brazil, Egyptian, &c.	Tota
1871	1,670,100	437,700	600,000	2,716,
1870	1,228,400	576,500	456,300	2,261,
			Increase of Delivery, 1871	455,

AVERAGE WEEKLY DELIVERY FOR CONSUMPTION FROM LIVERPOOL AND LONDON TO 26TH OCTOBER.

	American.	E. India.	Brazil, Egyptian, &c.	Tot
1871	39,100	10,260	13,900	63,20
1870	28,600	13,400	10,600	52,60
			Increase of Weekly Delivery, 1871	10,60

ESTIMATED REAL CONSUMPTION OF GREAT BRITAIN AT THIS DATE.

	American.	E. India.	Brazil, Egyptian, &c.	Total
1871	32,000	12,000	16,000	60,00
1870	27,000	15,000	13,000	55,00

COTTON AFLOAT FOR GREAT BRITAIN 26TH OCTOBER.

	American.	East India.	Total.
1871	47,000	320,000	367,00
1870	63,000	183,000	246,00
		Increase, 1871	121,00

Cowries are small shells brought from the Maldives, which pass current for coin in some parts of India and on the East Coast of Africa. Their value is about 1-130th of a penny.

Crape, a kind of thin gauze made of raw silk woven without crossing, and stiffened with gum-water; mourning crape is black; aerophanes, crape-lisse, and gauze are either white or coloured.

Credit, in commerce, a mutual trust or loan of merchandise, or money, on the reputation of the probity and sufficiency of a person engag in trade.

Crete, an island in the Mediterranean belonging to Turkey *Est.*, 150 miles lo and from 6 to 35 miles in breadth. *Po* 280,000, the component parts of which a 209,000 native Christians, 68,000 Mohamm dans, 2,600 foreigners, 400 Jews. *Lat.*, b tween 34° 55′ and 35° 43′ N.; *long.*, betwe 23° 30′ and 26° 30′ E. *Industries.* The thr fortified towns contain barely 40,000 souls; th ainder are engaged in agriculture. The tans are essentially agricultural; and, the pulation being very inadequate for the age of the soil, few can be spared for manutures. The only branch of industry of im- rtance is soap; the best is made at Candia, ere its price in 1869 was 200 piastres the ntar (31s. per cwt.), while that of Canea ched only 170 piastres the cantar (26s. 4d. r cwt.) There are 20 tan-yards at Candia, d several in Canea, for the preparation of hides, sheep, and goat-skins. Salt is made small quantities for home consumption. hetstones are exported to Marseilles; price out £4 6s. per ton. The coasting trade is rried on chiefly by three lines of steamers—ustrian, Turkish, and Egyptian. The boats the Austrian Lloyd's run weekly between ra and Crete, touching at Canea, Rétimo, d Candia. They form the principal means communication between Crete and Europe. he others communicate between Crete, Conantinople, and Alexandria. Small craft enged in the coasting-trade average 24 in numr, of an aggregate tonnage of 800. *Shipng, British and Foreign.* Sailing vessels d steamers entering the ports of Canea, da, Candia, and Rétimo during the year erage in number 1,572, and in tonnage 6,653. *Trade and commerce.* The superous produce is exported to Turkey, Egypt, d Greece principally, and to a smaller ext to Austria, France, Italy, and England. e chief exports are olive-oil and soap. A rge portion of the yearly crop of oil is conerted into soap, of which about 3,000 tons were exported in 1869, or somewhat less than the average yearly shipments. The oil crop is usually good and abundant, and is in request for the English market. The market price in 1867 ranged from £35 to £42 per ton, free on board. Vessels coming to Crete for oil must bring empty casks, for none are to be purchased on the island. Of raw products exported, the principal are fruit (fresh and dried), carobs, valonea, silk, cotton, hides and skins, honey and wax, sponges and whetstones. Sponges abound on the east coast of Crete, but the natives do not dive for them. This calling is pursued by Greeks from the islands of Symi, Calymno, and Khalki, who come yearly in numerous small craft, and purchase licences to fish for sponges. These duties are farmed, and the actual farmer is a Frenchman, who also fishes on his own account, and makes use of a small steamer and diving-bell to facilitate his operations. The wages of agricultural labourers in Crete are generally from 1s. 4d. to 1s. 8d. per day, rising to 2s. in the active season. The same rates are paid for unskilled labour in the towns; but artisans, such as masons, carpenters, and smiths, earn from 3s. 6d. to 4s. per day. Silk is exported in the form of cocoons and silkworms' eggs, value £18 per cwt. and about [illegible] per lb. respectively. Valonea comes from Rétimo; price about £9 6s. per ton. Cotton is cultivated to a limited extent; price about 9d. per lb. Hides sell for 10s. to 14s. each; goatskins, about 2s.; sheepskins, 1s. 4d.

ESTIMATED STATEMENT OF EXPORTS.

1863	£400,000	1867	£474,000
1864	344,000	1868	380,000
1865	332,000	1869	381,000
1866	250,000		

Imports. Calicos, soda-ash, coffee and sugar, salt-fish, iron, drysalteries, rice, jute, sacks, and crockery from England; the total value of which, in 1869, is estimated at £200,000, as against £200,000 in 1868, £93,000 in 1867, and £86,000 in 1866. Imports, such as coal, timber, silk, and woollen goods, cereals, butter, &c., are imported from Russia, Italy, Austria, and France. *Banking.* The Government bank and branches at Canea, Candia, and Rétimo lend money at 8 per cent. to agriculturists, and at 12 to merchants. Capital, £68,534.

ESTIMATED STATEMENT OF IMPORTS.

1863	£400,000	1867	£340,000
1864	446,000	1868	500,000
1865	363,000	1869	574,000
1866	270,000		

CUSTOM HOUSE, an office established by law in maritime ports and cities for the receipt and management of the customs and duties imposed on goods imported or exported; where also bounties and drawbacks, payable or receivable upon such importation, are paid or received; and where ships are cleared, &c. The business of the Custom House is regulated by the Customs Consolidation Act, 16 & 17 Vic., cap. 107, an abstract of which we give. *Importation and prohibition* (41). It shall be lawful to import into the United Kingdom any goods which are not, by this or any law in force at the time of importation thereof, prohibited to be so imported, and to warehouse, under the laws in force for the warehousing of goods, without payment of duty on the first entry thereof; but the duties on the following goods, and such other goods as the Commissioners of the Treasury may, from time to time, direct, shall be paid on the first importation thereof, and such goods shall not be warehoused, either for home consumption or for exportation, viz.:—corn, grain, meal, and flour, and wood goods from British possessions. *Times of importation of goods and arrival of ships defined* (42). If it shall become necessary to determine the precise time at which an importation of any goods shall be deemed to have effect, such time shall be deemed to be the time at which the ship importing such goods shall actually come within the limits of the port of discharge; and if any question shall arise in respect of any charge or allowance upon such ship, exclusive of cargo, the time of such arrival shall be deemed to be the time at which the report of such ship shall have been or ought to have been made. *Goods absolutely prohibited to be imported.* Books wherein the copyright shall be first subsisting, first composed, or written, or printed in the United Kingdom, and printed or reprinted in any other country, as to which the proprietor of such copyright, or his agent, shall have given to the Commissioners of Customs a notice in writing that such copyright subsists, such notice also stating when such copyright will expire. Coin, viz.: False money, or counterfeit sterling coin, silver of the realm, or any money purporting to be such, not being of the established standard in weight and fineness. Extracts, essences, or other concentrations of coffee, chicory, tea, or tobacco, or any admixture of the same. Malt, whether in grain, or in the form of concentrated extract or essence, but not including any fermented liquors made from malt. Indecent or obscene prints, paintings, books, cards, lithographic or other engravings, or any other indecent or obscene articles. Snuff work, tobacco stalks stripped from the leaf, whether manufactured or not; tobacco-stalk flour. *Goods prohibited to be exported except in transit, and subject to such regulations and restrictions as the Commissioners of the Treasury may direct, and duly reported as goods in transit accordingly.* Articles of foreign manufacture, and any packages of such articles bearing any names, brands, or marks of manufacturers resident in the United Kingdom. Clocks and watches of any metal impressed with any mark or stamp, or purporting by any mark or appearance to be the manufacture of the United Kingdom. Parts of articles, viz.:—Any distinct or separate part of any article, not accompanied by the other part, or all the other parts, of such article, so as to be complete or perfect, if such article be subject to duty, according to the value thereof. *Goods prohibited to be imported except subject to the restrictions on importation herein contained.* Infected cattle, sheep, or other animals, and hides, skins, horns, hoofs, or any other parts of cattle or other animals which her Majesty may by order in Council prohibit, in order to prevent any contagious disease. Silk: Manufactures of silk, being the manufactures of Europe, unless into the ports of London, Liverpool, Hull, Southampton, Leith, or Dublin, or ports appointed by the Commissioners of Customs, or into the ports of Dover or Folkestone, direct from Calais or Boulogne, and unless in ships of fifty tons burden or upwards. Spirits (not being perfumed or medicinal spirits), unless in ships of fifty tons burden at least, and in casks or other vessels capable of containing liquids, each of such casks or other vessels being of the size or content of twenty gallons at the least, and duly reported; or in glass bottles, or stone bottles, not exceeding the size of three pint bottles, and being really part of the cargo of the reporting ship duly reported. (All other goods, except tobacco and European silks, may now be imported into any port; but as tea, if bonded, is required by the regulations to be deposited in a separate warehouse, or separate part of a warehouse, its importation is actually confined to London and such of the larger ports as possess the requisite places of deposit. —*Willmore and Beadell.*) *Vessels inwards. Ships to come quickly to place of unloading, and bring to at the stations for boarding officers.* If any ship coming into the United Kingdom or Channel Islands shall not come as quickly up to the proper place of mooring or unlading as the nature of the port shall admit, without touching at any other places, and, in proceeding to such proper place, shall not bring to at the station appointed for the boarding of ships, or if, after arrival at such place, such ship shall be removed without the knowledge or consent of the proper officer of the Customs, or if the master of any ship shall neglect or refuse to provide the officer stationed on board sufficient room under the deck, in some part of the forecastle or steerage, for his bed or hammock, he shall forfeit £20. *Clause* 48 enacts that when officers board a ship they are to have free access to all parts, with power to lock up, seal, mark, or otherwise secure any goods on board; and that if any lock, mark, or seal placed on goods by the officers be wilfully opened, altered, or broken, the master shall forfeit £20. All goods found concealed are forfeited. *Clause* 49 enacts that no goods except diamonds, bullion, lobsters, and fresh fish are to be landed on Sunday or holidays, nor on any other days except between eight o'clock in the morning and four o'clock in the afternoon: also that goods unshipped, unless with the authority of the Customs, are forfeited. And if any goods be unshipped for the purpose of being landed, after due entry thereof, they shall be forthwith removed to, and landed at, the place at which the same are intended to be landed, and in default thereof, such goods shall be forfeited, together with the barge or other vessel employed. *As to the report of the cargo of merchant ships, and of ships in commission, bringing merchandise from parts beyond the sea.* The master must report the arrival of his ship within twenty-four hours after arrival, and before bulk be broken; and in default, or should he make a false report, he shall forfeit £100. *Commissioned ships having goods on board to deliver an account thereof.* The master or purser is required to deliver an account of the cargo, the quantity and quality of every packet or parcel, and the names of the shippers and consignees; and on failure thereof he shall forfeit £100. In such a case ships are liable to search. *Master to deliver bills of lading. Bulk not to be broken or stowage altered.* In case the master fails to produce a bill of lading, or copy, if required; or if any such bill of lading shall be false, or if, after the arrival of any ship within four leagues of the coast, bulk be broken or any alteration made in the stowage of the cargo of such ship, so as to facilitate the unlading of any part of the cargo, or if any part be staved, destroyed, or thrown overboard, or any package be opened, unless accounted for to the satisfaction of the Commissioners of Customs, in every such case such master shall forfeit £100. *Clause* 54 enacts that any package, the contents of which the master declares is unknown to him, may be opened and examined by the officers of Customs. *Entry of dutiable goods for home consumption.* The importer, or his agent, of all goods liable to duty must, before unshipment, make a perfect entry of the same, stating the dock, ship's name, nationality of ship, master's name, port whence imported, marks and numbers of goods, number of packages, quantities and descriptions of goods, and value. *Payment of duties warrant for delivery.* Upon payment of the duties due, the collector or other person shall sign the entry, which shall be transmitted to the landing-waiter, and be his warrant for the landing and delivery of such goods. *Goods undervalued may be detained. Proceeds of sale, how to be applied.* If goods have been undervalued, with the object of deceiving the Commissioners, they have power to detain the same, and, after seven days, determine either to deliver them to the consignee on the entry at such valuation as they may place upon them, or sell the goods for the benefit of the Crown, a moiety of the surplus to be retained for distribution among deserving officers. *Goods to be warehoused. Upon further entry may be delivered for home use or for exportation.* The particulars of entry shall be the same as those given on duty-paid entries, so far as the same shall be applicable, with the name and description of the warehouse, and the name of the person in whose name they are to be warehoused. This entry, duly signed, shall be the warrant for due warehousing of such goods. If, after entry and landing, but before the goods are actually deposited in the warehouse, the importers shall duly enter the same, or any part thereof, for home use or exportation, the same may be so delivered *The entry of goods free of duty.* The importer of goods not subject to duty, or his agent, shall pass an entry with the same particulars as are required for dutiable goods, as far as the same is applicable; and this entry shall be a transcript of the report, and shall therein describe such goods according to the terms upon which they are free of duty, and their value; and when this bill is signed by the collector it shall be transmitted to the proper officer, and be his warrant for delivery. Within fourteen days after the importer is required to furnish a full and true account of the goods so landed, and the owner, master, or consignee of the importing ship shall sign, and leave with the collector of the Customs within fourteen days after the final discharge of the goods, a full and accurate list thereof, stating the quantities, and distinguishing the weight and contents by measurement of such goods, if any, comprised therein as shall be chargeable by weight or by measurement for the freight payable thereon, with the names of the consignees, or the names of the persons actually paying the freight for the same; and on failure to leave such list, such owner, master, consignee, or agent, shall forfeit the sum of £20. *Entry by bill of sight when goods not known.* The importer of any goods, or his agent, if unable, for want of full information, to make a perfect entry of such goods, on making and signing a declaration to that effect, may make an entry by bill of sight. *Warrant for landing. Before delivery importer to make perfect entry.* After goods have been landed by bill of sight, the importer is required, within three days, to make a full and perfect entry by endorsing on the bill of sight such particulars as are required on making perfect entry of goods, whether for payment of duty, or for warehousing, or for delivery free of duty, as the case may be, affixing the date, with his signature and place of abode, and such endorsement, when duly signed, shall be taken as the perfect entry thereof. *Clause* 63 enacts that goods entered by bill of sight are not to be delivered unless the duties thereon are paid, or a sum of money sufficient to cover the duties payable deposited with the proper officer of Customs *Clause* 64 enacts that goods are to be taken to the Queen's warehouse, in default of perfect entry, within three days, and sold in default of such entry within one month after landing. And also that, if entry is not made in the manner required by the law, the goods will be forfeited. *As to the entry of goods re-imported as foreign, or by bill of store.* All British goods re-imported into the United Kingdom shall be taken to be and be entered as foreign, unless re-imported within ten years after the exportation, and it be proved to the satisfaction of the Commissioners of Customs that the property in such goods has continued and still remains in the person on whose account they were exported, when they may be entered as British goods by bill of store, in the form and manner the said Commissioners may direct, excepting the following, viz.: corn, grain, meal, flour, and hops, all for which drawback of excise shall have been received on exportation—unless by special permission of the Commissioners of the Customs, and on repayment of such drawback; also all goods for which a bill of store cannot be issued in the manner directed, save remnants of British goods, with the permission of the Commissioners. *Bill of entry to be in duplicate.* Two or more duplicates to be delivered by the importer, in default of which he forfeits £20 *Clause* 68 enacts that no entry or warrant is valid unless goods are properly described therein. *Clause* 69 enacts that goods concealed in packages or delivered without entry are forfeited. *Clause* 70. Surplus stores, not excessive, may be entered for private use or warehouse. *Clause* 71. Entry of goods by agents without licence, or by unauthorized persons, is not permitted, under a penalty of £20. *Clause* 72. An agent is required to produce his authority if required. *Clause* 73. Officers may take samples from goods for examination. *Clause* 74. Goods not entered within 14 days may be conveyed to the Queen's warehouse, as also small packages or quantities of goods; also, that if the duties and charges on such goods be not paid within three months, the latter may be sold and the proceeds applied, first to the payment of freight and charges, next to duties, and the surplus, if any, shall be paid to the proprietor of the goods on his application for the same. Provided always, that if the importing ship and goods be liable to quarantine, the time for entry and landing shall be computed from the date of release. Provided always, that if 48 hours (or any certain period after the report) be specified in the bill of lading for the discharge of cargo, the importer do neglect to enter and land the same within such 48 hours, the master or owner of such ship may then himself enter and land such goods. *Goods not worth the duty may be destroyed.* *Clause* 75 enacts that if goods remain on board importing ship beyond 14 days, such ship may be detained by the proper officer until all expenses be paid for watching and guarding such goods beyond the prescribed period, not exceeding 5*s.* per diem. *Clause* 76 enacts that no claim for abatement of duty on account of damage can be allowed unless the claim is made on the first examination, nor unless it be proved that the goods were damaged before they were landed from the importing ship; also that goods derelict, &c., and droits of Admiralty are to be treated as foreign goods, unless they are the growth or produce of any country by virtue whereof the same may be entitled to be admitted at less than the foreign duty, or duty free; also, that damages to be assessed by competent persons, the Commissioners having the power to call upon two indifferent merchants to examine the goods and certify to what extent the same are lessened in value by such damage, whereupon the officers may make abatement not exceeding three-fourths of the duty originally chargeable thereon; but no allowance shall be made for damage on coculus indicus, nux vomica, rice, guinea grains, lemons, spirits, corn, grain, meal and flour, opium, sugar, cocoa, oranges, tea, coffee, pepper, tobacco, currants, raisins, wine, and figs. *Goods from foreign possessions.* No goods shall be entered as of or from a British possession abroad (if any benefit attach to such distinction), except the territories subject to the government of the presidencies of Bengal, Madras, and Bombay respectively, unless the master of the importing ship shall have delivered to the collector or comptroller a certificate under the hand of the proper officer of the place where such goods were taken on board of the due clearance of such ship from thence, containing an account of such goods. *The Lords of the Treasury may require certificates of production*, and if any goods in respect of which such certificates are required be imported without such certificate, they shall be deemed to be foreign goods, and liable to any duty attaching to them as such. *Clause* 79 enacts that certificates for spirits from British possessions in America and the island of Mauritius must be produced by the master of the importing ship, testifying that proof had been made to the proper officer of the place that such goods were the produce of some British possession, stating the name of the place, the quantity and quality of the goods, the number and denomination of the packages, the name of the ship in which they were laden, and of the master thereof. *Goods from the Channel Islands.* Any goods the growth of or manufactured from materials grown in the Channel Islands, or any made from materials upon which the duty has been paid in the United Kingdom, and upon which no drawback has subsequently been granted, may be imported into the United Kingdom without payment of any duty; but such goods shall be charged with any proportion of such duties as shall fairly countervail any duties of excise payable on the like goods the produce or manufacture of the part of the United Kingdom into which they may be imported, or payable upon any of the materials from which such goods are manufactured, and all goods manufactured in the said islands from any other than the aforesaid islands shall be taken to be foreign. Before any goods shall be entered as the produce of the Channel Islands, the master is required to produce a certificate from the governor, lieutenant-governor, or commander-in-chief, testifying to the same. *Clause* 84 enacts that, before any wine is entered as being the produce of any of the British possessions abroad, the master of the importing ship must deliver a certificate from the proper officer of such possessions testifying to the same. AS TO THE UNSHIPPING, LANDING, EXAMINATION, WAREHOUSING, and CUSTODY OF GOODS. *Unshipping, weighing, &c., of goods and piling of timber.* All the landing operations of goods, unpacking, repacking, bulking, sorting, &c., to be performed at the expense of the importer; also, that the piling, sorting, and framing of timber are to be performed at the expense of the importer, and no allowance shall be made on account of any interstices. *Clause* 86 enacts that any goods removed or carried into the warehouse without examination or authority shall be forfeited. *Clauses* 87 and 88 enact that an account shall be taken of all goods landed by the landing-waiters; also, that goods to be entered and duties ascertained according to landing account. *Clause* 91 enacts that, if the occupier of any warehouse shall neglect to stow the goods warehoused therein so that easy access may be had to every package and parcel thereof, he shall for every such neglect forfeit £5. *Clause* 92 enacts that the occupier of any warehouse must produce any goods deposited in such warehouse if required, or forfeit, for every such neglect, £5 in respect of every package or parcel not so produced, besides the duties due thereon. *Clause* 93. Goods not duly warehoused, or fraudulently concealed or removed, forfeited. *Clause* 94. If the importer clandestinely open the warehouse and gain access to the goods therein, he shall forfeit for every such offence £100. *Clause* 95 enacts that if any goods shall be taken out of any warehouse without due entry of the same, the occupier of such warehouse shall forthwith pay the duties due upon such goods; also, that every person so taking out any goods without payment of duty, or who shall aid, assist, or be concerned therein, and every person who shall wilfully destroy or embezzle any goods duly warehoused, shall be deemed guilty of a misdemeanour, and suffer punishment by law. *Clause* 96. If goods be damaged by fire, &c., the importer is not entitled to compensation. *Clause* 97. The duties on goods lost or destroyed by unavoidable accident may be remitted by the Commissioners. AS TO THE REMOVAL OF WAREHOUSED GOODS. *Goods may be removed from one port to another* as often as may be required on the delivery to the proper officer by the person requiring such removal of a request note, stating the particulars of the goods required to be removed, the name of the port, or of the warehouse, if in the same port to which the same are intended to be removed, and with such other information, and in such manner and form, as the authorities may direct *The transmission of account—and remover to give bond in amount of duty—Bond how discharged.* On the delivery of goods for removal, an account containing the particulars thereof shall be transmitted from the officers of the port of removal to the officers of the port of destination, and the person requiring the removal thereof shall enter into bond, with one sufficient surety, in a sum equal, at least, to the duty chargeable on such goods for the due arrival and re-warehousing thereof at the port or place of destination, and such bond shall not be discharged unless such goods shall have been produced to the proper officer, nor until the full duties due upon any deficiency of such goods not accounted for shall have been paid; but any remover may enter into a general bond with such sureties, in such amount and under such conditions as the Commissioners may approve, for the removal from time to time of any goods from one warehouse to another. *Goods on arrival at port of destination* to be subject to the same regulations as goods on first importation; also, they may, after formal re-warehousing, be entered for exportation or for home use on payment of duties. *No spirits shall be removed except from warehouse.* No spirits which shall have been imported from ports beyond the sea upon which a higher duty is payable on their importation into England than on their importation into Scotland or Ireland, shall be brought from Scotland and Ireland into England; nor shall any such spirits upon which a higher duty is payable on their importation into Scotland than on their importation into Ireland, be brought from Ireland into Scotland, except such as shall have been duly warehoused upon the first importation thereof, according to the laws in force for the warehousing of goods, and which shall be in the warehouse at the time of such intended removal, and which shall be removed from one warehousing port to another warehousing port; and all such spirits, when removed, shall be liable to the duty payable thereon in that part of the United Kingdom into which they shall be so removed, if they be entered for home consumption therein; spirits removed contrary hereto shall be forfeited, and all persons concerned in such removal shall forfeit £100, or treble the value of such spirits. *Warehoused goods, if not cleared* for home use or exportation within five years, must be re-warehoused, and the duties on deficiencies and expense of examination shall be paid by the proprietor. *Goods not cleared* or re-warehoused, and duties paid on deficiencies, after five years, shall, after one month's notice, be sold, and the proceeds shall be applied to the payment of duties, warehouse rent and charges, and the surplus, if any, shall be paid to the proprietor. Goods not worth the duty may be destroyed. *Goods in warehouses may be sorted, re-packed, &c.*, and any alterations made which may be necessary for the preservation, sale, shipment, or disposal thereof, under such regulations as the Commissioners from time to time direct; also, wine or spirits may be bottled for exportation only. Brandy may be mixed with wine in the proportion of 10 gallons to 100 casks of wine, or spirits may be filled up and racked off; moreover, wines may be mixed and samples taken. *Repacking.* Foreign import or duty paid packages only to be used in re-packing. *Goods in warehouses may be taken out* without payment of duty, for such purpose and for such period as to the Commissioners may appear expedient, and in such quantities, and with such security by bond for the due return thereof, on the payment of the duties, as they may direct. *Entry for home consumption or exportation.* No warehoused goods shall be taken or delivered from the warehouse, except upon due entry for exportation under the care of the proper officers, or upon due entry and payment of the full duties for home use, except goods delivered into the charge of the searchers, to be shipped as stores in such quantities as the collector or comptroller shall allow, subject to the regulations of the commissioners. *Entries for wood goods restricted.* No entry for home consumption shall be received for or in respect of any timber or wood goods deposited in any warehouse for security of duties for any less quantity at any one time than five loads of such timber or wood goods, unless such wood goods be delivered by tale, in which case such entry may be passed for any quantity thereof not being less than 240 pieces, or two great hundreds of such wood goods, and no less quantity of such timber or wood goods shall be delivered in virtue of any such entry at any one time than one load of such timber or wood goods, or 90 pieces of the latter if delivered by tale. Imported *playing cards* are not to be sold without an Inland Revenue wrapper, under penalties of £10 and £20. The *forgery* of wrappers provided by the Inland Revenue is deemed a felony.

For table of duties, *see* TARIFF.

D

Damask [Fr. *Damas*, It., Sp. and Port. *Damases*, Ger. *Damast*], a silk stuff with a raised pattern, so that the right side of the damask is that which has the flowers raised or saturated. Damasks should be of dressed silk, both in warp and weft. Also a kind of wrought linen made in the North of Ireland principally, which takes this name on account of its resemblance to silken damask.

Days of Grace are a customary number of days allowed for the payment of a bill of exchange after it has become due: in this country three days are allowed.

Dates [Ger. *Datteln*, Fr. *Dattes*, It. *Datteri*], the fruit of the greater palm-tree: they are the shape of an acorn, but bigger, and contain, under a thin, yellow skin, a pulp of a sweetish, slimy taste, and under this a long hard kernel with a furrow running its whole length. They should be chosen large, yellow, with few wrinkles, plump, fleshy, of a whitish colour towards the kernel, and of a vinous taste.

Dead-Reckoning, the estimate or conjecture which seamen make of the place where a ship is, keeping an account of the distance run by the log.

Deals, or Deal-Boards [Ger. *Dielen*, Du. *Deelen*, Da *Dæler*, Sw. *Tiljor*, Fr. *Planches minces*, It. *Tavole piane*, Sp. *Tablas poco gruesas*, Port. *Taboinhas*, Rus. *Doski*, Pol. *Tarcice*], a thin kind of fir planks, of great use in carpentry: they are formed by sawing the trunk of a tree into a great many longitudinal divisions, of more or less thickness, according to the purposes they are intended to serve. Deals are rendered much harder by throwing them into salt water as soon as they are sawed, keeping them there three or four days, and afterwards drying them in the air or sun; but neither this nor any other method yet known will preserve them from shrinking. Deals are imported by us from Dantzic, Petersburg, Narva, and many other ports in the Baltic, and from North America.

Debenture, the certificate given at the Custom-house to the exporter of goods on which a drawback is allowed, stating that he has complied with the statutory regulations, and is entitled to the drawback mentioned. To comply with the regulations, "the person entitled to any drawback on any goods duly exported, or his agent authorised by him for that purpose, shall make and subscribe a declaration upon the debenture that the goods mentioned therein have been actually exported, and have not been relanded, and are not intended to be relanded, in any part of the United Kingdom, and that such person, at the time of entry and shipping, was and continued to be entitled to the drawback thereon, and the name of such person shall be stated in the debenture, which shall then be delivered to such person or his agent, and the receipt of such person on the debenture, countersigned by the holder of such debenture, if the same shall have been transferred in the meantime, be the discharge for such drawback when paid."

Debit, among book-keepers, is used to express the left-hand page of the ledger, to which are carried all articles supplied or paid on the subject of an account.

Deed, a written contract, sealed and delivered. It must be written before the sealing and delivery, otherwise it is no deed; and after it is once formally executed by the parties, nothing can be added or interlined; and therefore if a deed is sealed and delivered with a blank left for the sum which the obligee fills up after sealing and delivery, this will make the deed void.

Demurrage is a term employed in the shipping trade to express certain arrangements entered into by the owner of a ship and the freighter in respect of payment, should the time specified in the charter-party for loading or unloading cargo be exceeded. A, for instance, lends his vessel to B for a certain sum of money, to carry, say, a cargo of coals to Jamestown. B agrees to unload the vessel, on her arrival, within so many days, or pay demurrage for every day beyond that time she has a ton of coal on board. He, in other words, agrees to reimburse the owner for the extra expenses of maintaining the ship during any delays caused by him or his agents, and, to meet the requirements of the law, the amount of demurrage is set down at a certain sum per diem. The time allowed for loading or unloading is variously called "working" and "running" days, according to the nature of the port for which the vessel sails, but, however it is, on the expiration of the last day, if the cargo be not all discharged, the master of the vessel claims before twelve o'clock the demurrage for one day, and continues to do so from day to day until the ship is clear. Demurrage can be claimed even if the vessel be detained from the place of discharge through the overcrowded state of the port, or in consequence of the unlawful acts of Custom-house officers, but not so if the port has been occupied by an enemy, or if the vessel was unskilfully handled or neglected. On the other hand, when demurrage is claimed for delay in loading or detention in port, it ceases whenever the vessel has cleared for sea, though she may be prevented from sailing for a long time by adverse winds and bad weather.

Denmark [Da. *Danmark*, Ger. *Dänemark*], "the land or mark of the Dane," a kingdom in the N.W. of Europe, between *lat.* 53° and 58° N., *lon.* 7° and 13°. *Area.* 14,532 square miles. *Pop.* 1,717,802. *Provinces.* Zeeland, Fionia, Laalland, Falster, Bornholm, Jutland *Dependencies* Faro Islands, Iceland, Greenland, St Croix *Principal ports* Copenhagen, an exceedingly well built city on the E coast of Zeeland The harbour, a narrow channel running between the city and the island Amak possesses great depth of water, and is capable of accommodating upwards of 500 vessels Elsineur, the second port in importance is about 20 miles N from Copenhagen, at the narrowest part of the strait between the Cattegat and the Baltic Only small vessels can enter the harbour *Revenue* for 1869 70, in rix dols, 22 415 442 Expenditure, 22,531 092 showing a deficiency of 115,650, or £12 850 Balance in banks and treasuries amounted in sterling to £545 144 *National debt*, 1871 £13 233 000, of which about £900,000 are held by the Danish public *Commerce* As nearly all the foreign business is transacted in Copenhagen, the reports from that city will suffice to show the extent and nature of the Danish trade *Imports*, 1869 70 The main articles may be grouped under the heads of (1) sugar (2) coffee rice tea tobacco (3) manufactured goods (4) metals *Sugar* After deducting the exports of this group the imports were —

	lb
1869-70	31 [illegible]17 [illegible]19
1868 69	33 [illegible] [illegible]681
1867 68	30 [illegible] [illegible]02
1866-67	3 545 348
1865-66	20 163 [illegible]21

There is a marked tendency to take larger quantities of unrefined su[illegible] [illegible] quantities of refined sugars At the same time there is an increasing export of home refined sugars, as herewith shown —

	lb
1865-66	154,762
1866-67	708 037
1867-68	635 635
1868 69	3,132,085
1869 70	2,896,967

These figures probably indicate an increasing domestic manufacture An alteration has been made in the sugar duties which ought to interest foreign sugar refiners, especially those of Scotland, whose imports into Denmark have grown from 500,000 lb in 1867 to 12,000,000 lb in 1870 The object of the change was to enable the Danish West Indian planters, whose financial affairs were in a most unsatisfactory condition, to compete on an equal or favoured footing with the foreigners Sugars are classed and entered for duty as follows — Sugar candies, sugar in whole or broken loaves cakes or the like answering to the Amsterdam standard No 19 and thereover, a duty of 6 5 10th skillings per Danish lb Muscovados darker than the Amsterdam standard sample No 15 and other pulverized sugars not lighter than No 9 as well as dissolved and liquid sugars will pay a duty of 4 4 10th skillings per Danish lb Muscovados answering to the Amsterdam standard No 15 darker than No 19 but lighter than No 9, a duty of 4 5 10th skillings per Danish lb Other pulverized sugar (not Muscovados) answering to the Amsterdam No 1[illegible] but darker than No [illegible] a duty of 4 8 10th skillings per Danish lb *Coffee, Rice, Tea, Tobacco* —

	1867		1869	
	Import	Export	Import	Export
	lb	lb	lb	lb
Coffee	10[illegible] [illegible]17[illegible]	57[illegible] 141	17 03[illegible] 05[illegible]	4 531 3[illegible]5
Chicory	3 5[illegible] [illegible]777	None	3 34[illegible] 78[illegible]	60,923
Rice	21 351 [illegible]78	27[illegible] [illegible]39	14 [illegible]1[illegible] [illegible]19	4 417 5[illegible]6
Tea	4[illegible] 53[illegible]	14 [illegible]2	5[illegible]3 340	42 [illegible]72
Tobacco and Cigars	5 [illegible]2[illegible],1[illegible]1	31[illegible] 9[illegible]5	5 457 [illegible]50	401,019

The consumption of the articles of the above group, and of sugar likewise is steadily improving, and, taken together, they yield 44 per cent of the whole customs revenue of the kingdom *Manufactured goods* The import of these articles, whether of cotton linen hemp, silk, or wool, seems to be stationary if not declining The quantities declared for duty have been —

	Cotton Linens Hempen	Silk	Wool
1869-70	6,832,527	129 996	2,339 719
1868-69	7,710,025	145 189	2 166 463
1865 66	5,580,240	188,039	2,452 925

There seems to be a diminishing demand for the dearer and made up articles of this group, with a rising demand for the simpler kind The import of yarns and raw linen goods is increasing, while that of velvets and silks is declining "In his purchase of foreign goods," says Mr Strachey, "the Danish importer or tradesman seems constantly to select the worst qualities which he can procure This is particularly the case with English goods, of which, moreover, bad foreign imitations abound in Copenhagen" *Money* The rigsdaler = 6 marks = 96 skillings 2s 3d *Weights* Pound = 1 1023 lb avoir, Tonder of corn = 3 8270 bush of beer = 28 9189 gall of butter = 246 9179 lb avoir of coal = 4 6775 bush *Measures* Danish foot = 1 029 feet, Danish mile = 24,000 Danish feet.

Metals. The most important figures connected with this group are here given:—

	Import of Raw Metals.	Import of Iron and Iron-wares.
	lb.	lb.
1869-70	19,417,768	59,672,593
1868-69	19,130,007	57,197,007
1867-68	19,903,810	68,103,379
1866-67	20,032,153	44,809,039
1865-66	14,785,675	58,200,066

Nearly all the raw metals come from England, as well as two-thirds of the iron and iron-wares. There is a general and steady consumption of these wares. It appears that 19 articles of import produce 93 per cent of the whole customs revenue. These are—besides the above four groups—potables, wood, oils, salt, glass, earthenware, &c.; fruits, chicory, &c., cheese, coal. *Exports.* The following figures show the real value of the exports of Danish produce:—

	Vegetable Substances.
1865-66	£2,314,000
1866-67	2,307,000
1867-68	2,110,000
1868-69	1,826,000
1869-70	1,854,000

The decrease of exports is entirely in Danish goods, principally cereals and cattle. The share of Great Britain in the foreign trade of Denmark is more considerable than that of any other nation, being about 40 per cent. of the whole, and should the restrictions now impeding the free importation of domestic animals into British ports be removed, it will no doubt soon resume, and probably exceed its former standard.

	Animals and Animal Substances.
1865-66	£1,813,000
1866-67	1,834,000
1867-68	1,453,000
1868-69	1,581,000
1869-70	1,600,000

Cereals. Great attention is paid in this country to cattle and dairy produce. The agricultural surplus for foreign markets seems rather to diminish than increase. The productive soil is rated at about 6,450,000 acres, of which about 2,270,000 are sown with the four principal cereals—wheat, rye, barley, oats. These cereals make up seventeen-twentieths of the vegetable crop; their annual yield is about 8,600,000 quarters, valued at, say, £900,000. Of the general cereal harvest about 17 or 18 per cent. may be available for exportation; the average take is 800,000 quarters; or about half the whole export. Denmark sends abroad as much grain as North Germany or Russia, half as much as Austria or the Principalities. Although the Danish producer sent less grain abroad in 1870 than in 1865, he receives as much money, as may be seen from the following statement:—

	Exported Tonder.	Computed Value.
1865-66	3,675,373	£2,086,000
1866-67	2,903,896	2,180,000
1867-68	2,624,137	2,140,000
1868-69	1,796,653	1,780,000
1869-70	2,471,557	1,900,000

Animals. The export of animals continues to show that declining movement which has been steadfastly at work for several years.

	Sheep, Goats, Bucks, Lambs, Kids.		Horses		Cows and Oxen.		Swine and Pigs.	
	Export	Import	Export.	Import.	Export	Import	Export.	Import.
1865-66	38,878	8,654	6,653	2,238	49,505	8,081	51,577	11,329
1866-67	19,604	5,876	11,619	1,649	55,844	9,483	53,159	5,763
1867-68	9,766	5,025	7,643	2,366	51,969	14,176	55,444	2,620
1868-69	7,639	8,956	8,080	2,247	51,616	15,253	40,353	3,520
1869-70	8,651	10,032	8,850	1,969	46,425	11,487	22,686	17,343

It is stated that the increasing value of the animals compensates the country for the falling off in the number exported. The surplus export (*i.e.*, the whole export of animals after imports have been deducted) is priced for 1869-70 at £655,000, against £676,000 for 1865-66. Of the sheep exported in 1869-70 about one half went to England; of the 46,425 cows and oxen, we took 6,167; but to Schleswig and Holstein went 39,379 horned beasts and 2,820 pigs with 19,865 sheep, of which animals a great number are known to be forwarded to England *viâ* Hamburg. It is with the hope of diverting the current of exportation from the German channel that the Danish Government are constructing the port of Esbjerg, behind Faro, near the S.W. corner of Jutland, which is expected to be ready for use in two or three years. Esbjerg, will be connected from N. and S. with the Jutland railway system, and some official persons are sanguine as to its future importance as a place of transit. Owing to its position, Esbjerg will always be open, an advantage not enjoyed by any Danish port except, perhaps, Frederikshavn.

	Exports.	Imports.	Value of Surplus Exports
	Tonder.	Tonder.	£
1865-66	43,376	2,106	454,000
1866-67	44,534	2,123	433,000
1867-68	40,504	2,464	355,000
1868-69	35,547	7,675	303,000
1869-70	55,909	9,281	577,000

Butter. This trade is extending. About nine-elevenths of the butter exported went to England. Of the wool exported, 3,122,958 lb., about two-thirds went to England. *Meat.* The exports were.

	Meat Sausages. lb.	Bacon and Hams. lb.
1865-66	1,977,181	13,141,286
1866-67	1,652,860	9,111.778
1867-68	2,591,809	7,506,787
1868-69	2,769,944	7,998,171
1869-70	2,078,070	8,930,500

It is to be observed that the bacon and hams include slaughtered swine, and that the prices of meat and bacon are rapidly rising year by year. Of the bacon and ham exported, nearly 5,000,000 lb. went to England. *Navigation.* In 1867 the Danish commercial navy possessed 3,786 ships and boats, with tonnage in commercial lasts (equal to 2 tons register) 172,460, and 77 steamers with 4,151. On March 31, 1870, the figures were 2,808 ships, with 10,667 boats of and under 4 tons, with tonnage of commercial lasts 178,646 for the former. The whole increase for 1869-73 was 104 ships, with 10,170½ tonnage, of which 47 ships, with 5,300 tonnage, were bought abroad. The steamers were 89 in number, with 10,453 tonnage, and 4,981 horse-power; showing an increase of 5 vessels of 276 horse-power in the year. The shipping movement with England was 45 per cent. of the whole foreign trade. This table gives a view of the fluctuations from 1865-70:—

	Inwards.		Outwards.		Whole movement.	
	Ships.	Com lasts.	Ships.	Com. lasts.	Ships.	Com. lasts.
1865-66	2,766	164,187	2,091	84,566½	4,857	248,753½
1866-67	2,760	153,864	2,025	77,980	4,785	231,844
1867-68	2,501	152,376½	1,626	61,299½	4,127	213,676
1868-69	2,951	183,904¼	1,633	53,855½	4,584	237,759¾
1869-70	2,697	172,360	1,559	57,905¾	4,286	230,265¾

Departure, in navigation, is the easting and westing of a ship in respect of the meridian it departed or sailed from, or it is the difference in longitude, either east or west, between the present meridian the ship is under and that where the last reckoning or observation was made. This departure, anywhere but under the equator, must be counted according to the number of miles in a degree proper to the parallel the ship is under. The departure, in plane and Mercator's sailing, is always represented by the base of a right-angled plane triangle, when the course is the angle opposite to it, and the distance sailed is the hypothenuse, the perpendicular or other leg being the difference of latitude. And thus the theorem for finding it is always this. As radius is to the sine of the course, so is the distance sailed to the departure sought.

Design, in manufactories, expresses the figures with which the workman enriches his productions, and which is supplied to him by a draughtsman.

Diamond [Fr., Ger., Dan. and Du. *Diamant*, It. *Diamante*, Sp. *Diamond*, Port. *Diamante*, Rus. *Almas*, and Pol. *Dyament*], a precious stone which has been known from the remotest ages. When pure it is perfectly transparent, like crystal, but, of course, much more brilliant. Its figure varies considerably, but generally it is crystallized in the form of a six-sided prism, terminated by a six-sided pyramid. It is the hardest of all bodies: the best tempered steel makes no impression upon it. Diamond powder can only be obtained by grinding one diamond against another. The specific gravity of the diamond is about 3·5. They are chiefly found disseminated in gravel or embedded in sandstone in India, Brazil, and the Ural Mountains. They are also found in different parts of Australia, Sumatra, Java, and recently in the Cape Colony. Those of the Cape, however, are of a quality much inferior to the stones from the other countries. The Indian diamond in lustre is higher than Brazilian stones, but few are now found in India, the site of the Golconda mines having been built over and lost. The first water in diamonds means the greatest purity and perfection of their complexion, which ought to be that of the purest water. When they fall short of this perfection they are said to be of the second or third water, &c. The art of cutting and polishing diamonds is supposed to have originated in Asia, at some unknown period. They are cut into various forms the brilliant, the rose, and the table. The first shows the gem to the best advantage, and is always set with the table upwards. In the rose, the entire surface is covered with equilateral triangles, terminating in a sharp point at the summit. This form is used when the spread of surface is too great for its depth, and it could not be cut into the brilliant form without loss. The table is applied to such diamonds as may be regarded as plates laminal, or slabs, of small depth compared to their superficial extent. The brilliant and the rose lose in cutting and polishing more than half their weight. To find the value of diamonds, Jefferies lays down the following rule. He first supposes the value of a rough diamond to be settled at £2 per carat, at a medium; then, to find the value of diamonds of greater weight, he multiplies the square of the weight by two, and the product is the value required. To find the value of a rough diamond of two carats: 2 × 2 = 4, the square of the weight; which, multiplied by two, gives £8, the value. For finding the value of manufactured diamonds, he supposes half their weight to be lost in cutting them, and, therefore, we must multiply the square of double their weight by 2, which will give their true value in pounds. Then, to find the value of a wrought diamond weighing two carats, we find the square of double their weight, viz., 4 × 4 = 16; then, 16 × 2 = 32, value £32. For the purpose of estimating small diamonds, the jeweller employs a gauge, in the handle of which are small crystals of various relative sizes, from 1-16th to ¼ carat, and a comparison is therewith made when there are numbers of various minute sizes. The Pitt or Regent diamond has been valued at £400,000. The Pigot diamond weighs 49 carats, and is valued at £40,000. The Austrian diamond weighs 139½ carats; the Russian is worth £200,000. The *Koh-i-noor*, or "mountain of light," weighs 102¼ carats, but its value has never been estimated properly. The following are ascertained specific gravities of different varieties: Brazilian, 3·444; Brazilian yellow, 3·519; Oriental, 3·521; Oriental green, 3·524; Oriental blue, 3·525. The carat grain used in weighing diamonds is different from the troy grain, five diamond grains being only equal to four troy grains. Diamonds may be landed without report, entry, or warrant.

DIAPER [Fr. *Linge ouvré*, Ger. *Drell*, It. *Tela tessuta a opere*], fine flowered linen, commonly used for table-linen, manufactured in the east side of Scotland and the north of Ireland.

DIMITY [It. *Dobletto*, Sp. *Dimite*, Fr *Basin*], a cotton cloth, cross-barred, and similar in fabric to fustian.

DISCOUNT, a term used among traders, merchants and bankers. It is used by the two former in making their purchases or selling their goods, as an allowance for paying ready money instead of taking credit from the seller And with bankers, discount is the interest which they deduct from bills of exchange and promissory notes when they give cash for them, taking the discount for as many days as such bills and notes have to run ere they become due, at a certain rate per cent. per annum

DITTO, from the Italian *detto* (that which has been said), is abbreviated as *do.*, and is used in accounts to avoid repetition.

DIVIDEND, the payment made of any joint profit or fund set aside to be shared or divided. It is also the name given to express the proportion of a creditor's debt which he recovers from his debtor's estate.

DOCKS, an artificial receptacle or basin for shipping, either for their security or for the purpose of building, repairing, or examining them. There are two kinds, wet and dry. The former are usually constructed with gates to admit the water. Ships are admitted at high water, and kept afloat by closing the gates. Basins are wet docks without gates, the water ebbing and flowing with the tide. Dry docks sometimes become dry by the ebbing of the tide, but are usually pumped out by the steam-engine; they are closed by gates carefully constructed to prevent the ingress of the water. The most common form for this purpose is that of swinging-gates, opening in the middle like the lock-gates of a canal. The floating gate or caisson is a vessel with keel and stem, constructed to fit grooves in the masonry at the entrance of the dock. Water being admitted into this vessel, it sinks in the grooves, forming a closed gate: it is removed from its place by pumping out water sufficient to float it clear of the grooves. The principal docks on the Thames are the East and West India Docks, London Docks, St. Katherine Docks, Victoria Docks, Surrey Commercial Docks, Millwall Docks, and others.

DOWLAS, a sort of coarse linen cloth, manufactured principally in the N. of Ireland, Lancashire, &c.

DOWN [Ger. *Dunen*, *Flaumfedern*, Du. *Dons*, Da. *Dunn*, Sw *Dun*, *Tjun*, Fr. *Duvet*, It. *Penna matta*, *Piumini*, Sp. *Flojel*, *Plumazo*, Port. *Frouxel*, Rus. *Puch*, Pol. *Puchy*, Lat. *Plumae*], the fine feathers from the breasts of several birds, particularly that of the duck kind. That of the eider duck is the most valuable. These birds pluck it from their breasts and line their nests with it. We are told that the quantity of down found in one nest more than filled the crown of a hat, yet weighed no more than three quarters of an ounce. Three pounds of this down may be compressed into a space scarcely larger than one's fist, yet is afterwards so dilatable as to fill a quilt five feet square. That found in the nest is most valued, and termed *live down*; it is infinitely more elastic than that plucked from the dead bird, which is little esteemed in Iceland. The imports from Scotland, Norway, and Iceland amount to about £3,000 annually.

DRAB is a thick woollen cloth, woven purposely for great-coats, and it is sometimes double-milled. It is made in Yorkshire and in many parts of the W of England.

DRAWBACKS, in commerce, certain duties, either of the Customs or the Excise, allowed upon the exportation of some of our manufactures, or upon certain merchandise that has paid duty upon importation.

DUNGAREE, the name of a coarse cotton cloth, manufactured in various parts of India, and used by the poorer classes of natives. It is woven with two or more threads together in the web and woof. It is generally used for sails of country ships, and would no doubt be advantageously employed for the occasional light sails of larger ships, being more easily handled than European canvas.

DUNNAGE, loose timber, faggots, &c., placed on the bottom and sides of a ship's hold, either first by raising the cargo when she is loaded with heavy goods, to prevent her from becoming too stiff, or to prevent damage from leakage.

E

Eagle Wood [Ger. *Adlerholz*, Du. *Agelhout*, Da. *Ornetræe*, Sw. *Orntra*, Fr. *Bois d'Aigle*, It. *Legno d'Aquila*, Sp. *Madera del Aguila*, Port. *Pâo de Aguia*, Lat. *Lignum Aquilæ*], a species of beautiful wood, employed chiefly by turners in the formation of the finer articles; it comes to us from many parts of Asia.

Earing, in the sea language, is that part of the bolt-rope which, at the four corners of the sail, is left open, in the shape of a ring. The two uppermost parts are put over the ends of the yard-arms, and so the sail is made fast to the yard; and into the lowermost earings, the sheets and tacks are seized or bent at the clew.

Earnest is the money advanced to bind the parties to the performance of a verbal agreement. The person who gives it is in strictness obliged to abide by his bargain, and, in case he declines, is not discharged upon forfeiting his earnest, but may be sued for the whole money stipulated and damages; and by the Statute of Frauds, 29 C. II. cap. 3, no contract for sale of goods to the value of £10 or more is to be valid unless such earnest is given.

Ear-Ring [*Ear-rings*. Ger. *Ohrringe*, Du. *Oor-ringen*, Da. *Oreringe*, Sw. *Orringar*, Fr. *Boucles d'oreille*, *Pendans*, It. *Orrechini*, *Pendenti*, Sp. *Arracadas*, Port. *Arrecadas*, Rus. *Ssergu*, Pol. *Kolczyki*], an ornament worn by women, usually composed of gold, and frequently adorned with precious stones, pearls, &c.; manufactured principally at Birmingham and London.

Earthenware [Ger. *Irdene Waaren*, Du. *Aardegoed*, Da. *Leerkar*, Sw. *Lerkaril*, Fr. *Vaisselle de terre*, *Poterie*, It. *Stoviglie*, *Terraglia*, Sp. *Losa de barro*, Port. *Louca de barro*, Rus. *Gorschetschnue possudu*, Pol. *Gliniane naczynia*]. This is a general term made use of to express all kinds of articles made of earth for culinary and such like purposes; the principal English potteries are in Staffordshire.

Easing, in the sea language, signifies the slackening of a rope, or the like; thus, "to ease the bow-line or sheet," is to let them go slacker; "to ease the helm," is to let the ship go more large, more before the wind, or more larboard.

Eau de Cologne, a celebrated preparation for the toilet, consisting of aromatized alcohol. It is extensively manufactured in France and other parts of the Continent, from silent brandy, mixed with sage, thyme, camphor, cloves, and other herbs and spices, the whole being macerated together and then distilled.

Ebony [Fr. *Ebene*, Ger. *Ebenholz*, It. *Ebano*], an exceedingly hard and heavy wood, of great durability, and susceptible of a fine polish. There are many varieties of ebony. The best is that which is jet-black, free from veins, and close-grained; besides the black, there are red, green, and yellow ebonies, but these are not much esteemed. Ebony is chiefly used in the manufacture of chairs, couches, &c., and in mosaic and other inlaid work. It is procured in Ceylon, Malabar, Zanzibar, Mauritius, and Madagascar. Ebony, so-called, is found in most of the countries of the Asiatic Archipelago, from the Peninsula and Sumatra to the Philippine Islands. It is greatly inferior to the produce of Ceylon and Mauritius.

Echantillon [French], a pattern or specimen.

Edible Sea-Weed, a sea-weed abundant on the Tennasserim Coast, and exceedingly valuable for its nutritious and medicinal properties for invalids. According to Dr. O'Shaughnessy's (the discoverer's) analysis, it contains as follows:—Vegetable jelly, 54 5; true starch, 15·0; wax, a trace, 0·5; liqueous fibre, 18·0; gum, 4·0; sulphate and muriate of soda, 6·5; sulphate and phosphate of lime, 1·0; iron, a trace, 0·4; total. 100·0.

Egypt is virtually an independent state of N.E. Africa, although nominally a pashalik of the empire of Turkey. *Area* is estimated roughly at 31,000 geographical square miles. *Pop.* about 7,000,000. *Districts.* Masr-el-Bahri, or Lower Egypt; El Dustani, or Middle Egypt; and El Said, or Upper Egypt. These districts are sub-divided into eleven provinces, which contain 4,379 villages. *Commerce* consists, to a great extent, of goods in transit. *Exports* from Egypt to Great Britain in 1866, £15,368,824; in 1867, £15,498,292; in 1868, £17,584,616; in 1869, £16,796,233; in 1870, £14,116,820; in 1871, £16,387,424. *Imports* of British home produce in 1866, £7,556,185; in 1867, £8,198,111; in 1868, £6,056,404; in 1869, £7.982,714; in 1870, £8,726,602. *Capital and Ports.* Cairo, Alexandria, and Suez. *Cairo*, the trade and commerce of, consists of the export of native produce, of which the chief items are—ivory, gums, hides, ostrich-feathers; from Upper Egypt, cotton and sugar; and of the importation of indigo and shawls from India and Persia; of sheep and tobacco from Turkey and Syria; of cotton and woollen goods, prints and hardware, from Great Britain and Germany, and of cloth, furniture, and millinery from France and Austria. During the first half of the year 1872 about 30,000 bales of gum arrived in Cairo, each bale containing about four kantars. The best quality of gum-arabic is sold at about £5 per kantar; an inferior quality, called "lalkh," is sold at about £2 per kantar. During the same space of time about 30,000 kantars of ivory reached Cairo, which was sold at about £27 to £32 per kantar. This article is sent almost exclusively to Great Britain. From the Hegaz ox-hides are imported for home consumption and re-exportation to Europe.

Before the opening of the Suez Canal from 50,000 to 60,000 hides were imported annually; but the quantity has very greatly diminished of late, as the majority is carried direct through the canal. The skins of goats, sheep, and camels, brought from the villages in the neighbourhood, are entirely for home consumption. *Sugar factories.* Of late years the Khedive has directed his attention to the cultivation of the sugar-cane, and to the establishment of sugar factories, furnished with machinery on the most approved principles for pressing, desiccating, crystallizing, and refining the sugar. It is in Upper Egypt that this cultivation is carried on, and the factories are built on the plantations, as near as possible to the banks of the Nile. The sugar season lasts about three months. The factories now at work are:—

	Capable of producing in one season. Kantars.	Erected in
Jarsbut	30,000	1845
Erment	30,000	1848
Demeris	30,000	1851
Rhoda	200,000	1859
Erment	40,000	1864
Maghagha	150,000	1868
Sheikh Jadhl	100,000	1869
Al Matanah	100,000	1869
Abouksa	100,000	1870
Bana Mazar	200,000	1871
Aba Al Wakf	200,000	1871
Jeshu	200,000	1871
Miniah	200,000	1871

The feddan is little short of an English acre. The kantar is about 100 lb. One feddan produces about thirty kantars of sugar. The cost of the cultivation of sugar-cane is about £8 per feddan. Loaf-sugar is only made at the one factory at Rhoda. The sugar-makers, the refiners, and the engineers are nearly all Europeans, and most of them are Englishmen. It is impossible to compute how much the earliest factories may have cost, but it is estimated that those now in course of erection have cost the Khedive £2,000,000. The selling price of crystallized sugar is from 27*s.* to 32*s.* per cwt. The loaf-sugar made is not so white as that refined in England and France, but it is sweeter. Upwards of 100,000 feddans of land are devoted to the cultivation of sugar. In 1872 the Khedive's Daira exported upwards of 2,000,000 of kantars of sugar. *Currency.* Money of all nations is current here, the native coinage being insufficient. There are three rates of exchange. (1) The Government rate, which is 97½ piastres per pound sterling, counting the Egyptian silver piastre at its legitimate rate of one piastre, and exclusive of copper. (2) The commercial rate, which is 195 piastres per pound sterling, counting the silver piastre at two piastres, and also exclusive of copper. (3) The copper money, in which coin the pound sterling is worth about 410 piastres; but this fluctuates day by day, and now none but the poorer class of shopkeepers will consent to do any business in the depreciated coin. [*For* ALEXANDRIA *and* COTTON, *see* ALEXANDRIA.] *Suez*, trade and commerce of, being almost exclusively confined to the ports in the Red Sea, Jeddah is the principal point of communication; for although mail steamers and others do bring a certain amount of produce from India and China direct, consisting chiefly of indigo, shawls, silks, and China wares, the great bulk of the produce of the East which finds its way to Suez is brought to Jeddah in the first instance in the vessels which bring pilgrims annually from India, the Straits, and the East generally to that port, and thence reshipped and brought to Suez almost exclusively by the Khedive's postal steamers. It is estimated that an average of not more than 250,000 packages of all sorts, not exceeding 50,000 tons of goods, representing a total value of about £1,000,000, passes through the Suez Custom House, both ways included, in the course of the year. The following is a list of the several articles of which this trade consists, the most bulky portion of which is the natural produce of the respective countries. Thus, while Egypt sends large quantities of corn and pulse to the Hegaz and the Yemen, coffee, gums, resin, henna, senna, kelp, mother-o'-pearl, shells, charcoal, and hides form the more bulky portion of the cargoes brought from Souakin, Hodeida, Jeddah, Yambo, and El Wedge to Suez.

IMPORTS.

Abayats (woollen cloaks made in the Yemen and Hegaz).
Agates.
Almonds.
Aloes.
Aloes Wood.
Animals, wild.
Aristolochia (in Arabic, Razwind).
Asses, the white breed of the Hegaz and Yemen, very highly prized.
Balsam.
Basil.
Birds, live.
Bizrbat (vegetable ivory nuts used for turning into beads).
Butter, in jars.
Camwood (in Arabic, Beckhem).
Cardamoms.
Carpets, Persian.
,, Yemeni (in Arabic, Hambel).
Cashoo (in Arabic, Kaad Hindi).
Cattle, horned.
Charcoal.
China wares and fancy work.
Cinnamon.
Cloves.
,, oil of.
Cochineal.
Cocoa-nuts.
Coffee.
Colocynth.
Coral, black (in Arabic, Youssur).
Coreze, wood for making pipe-sticks.
Cotton, raw.
,, manuf. in India (in Arabic, Melayat).
Cowries.
Cubebs (in Arabic, Cababi Cini).
Dates, dried.
Date-cake.
Deffr-hood, the horny membrane of a sea-shell, used for making inlaid work.
Drugs.
Fans of palm.
Fly-whisks of palm.
Ginger.
Giraffes.
Gum Arabic.
Gunny-bags.
Henna.
Herbs, dried.
Hides, Buffalo.
,, Camel.
,, Ox or Cow.

Holingan (Arabic, a wood used for dyeing yellow).
Honey.
Horns, Ibex.
„ Rhinoceros.
Horses.
Indigo.
Ivory.
Kelp (Alkali).
Kossoo, or Capso, an Abyssinian medicinal herb.
Lif, a white fibre used in baths.
Mats.
Mother-o'-pearl shells.
Mushrooms, dried.
Musk.
Muswak (Arabic, short pieces or sticks of fibrous wood used for making paint brushes tooth brushes, &c).
Myrrh.
Nutmegs.
„ from Abyssinia, of inferior quality.
Olibanum.
„ of inferior quality.
Ostriches.
Ostrich feathers.
Pepper, black.
Pickles.
Pigments.
Preserves, sweet.
Raisins.
Rattans.
Reeds, for making pens.
Rhubarb.
Rice.
Rose-leaves.
Rose, oil of.
Sandal-wood.
Senna.
Sesame.
Shawls.
Silk, raw.
„ manf. from India.
„ „ „ Yeman.
Skins, fish.
„ goat and sheep.
Spices, sundry.
Sponge.
Sugar.
Tallow.
Tamarinds.
Tea.
Tin.
„ plates.
Tobacco, or Tombac (Persian).
Tobacco, or Tombac (Yemeni).
Tortoise-shell.
Turmeric.
Twine, made of rushes.
Wax, bees'.
Zourounba (Arabic), a root used to cause liquids to ferment.

EXPORTS.

Alkali.
Alum.
Antimony.
Caps, Fez.
Carpets.
Cheese.
Mahleb (kernels of cherry-stones).
Cochineal.
Copper.
Coral, red.
Cotton Seeds & Stuffs.
Crockery.
Figs.
Glass.
Goat Skins.
Hardware.
Iron.
Lead.
Shaibeh (Orchilla).
Nuts.
Olive Oil
Oudetrrh (Ononis Spinosa).
Paper.
Petroleum.
Preserves.
Pulse.
Quicksilver.
Rice.
Resin.
Saffron.
Sarsaparilla.
Silk Stuffs.
Sweetmeats.
Verdigris.
Walnuts.
Wood (deal planks).
Woollen Stuffs.

Domestic trade. The trade consists solely in articles of daily use and consumption, and is exclusively a trade of retail; the import and export trade is carried on by agents or merchants, established for the most part in Cairo or at Jeddah. *Harbour.* The natural harbour known as the Suez Roads is the best harbour in the Red Sea. It is formed by a spacious bay, four miles into the land to the west, just opposite the town, and is so ample that it would contain 1,000 ships of any draught and tonnage, and so safe from winds and currents that no accident has happened in it during the last 30 years. The greatest length of the harbour is about 4 nautical miles, in a direction N.E. and S.W.; the headlands at each extremity of the shore 15 stat. miles in circuit; between them are, on the S., Adabieh Point below Ataka, and on the N. the Suez Hotel. From the hotel and S. side of the town runs southerly a gravelly sand-covered spit, a mile wide at its commencement, and tapering to a point. 1¼ mile south of its point there juts out from the Arabian shore a tongue of land called Gad el Marakeb, with its extremity in a line south of the Suez Hotel, and forms the north limit of its entrance. The opening across from the point of Gad el Marakeb to Adabieh Point is about 4 miles N.N.E. and S.S.W. The channel of entrance to the anchorage through that opening is N.N.E. ½ N. and S.S.W. ½ S., and affords a free passage for the approach from the south, which all ships must take, of 1¾ mile wide. The depth of water over the whole area of the harbour varies from 4 to 9 fathoms. The bottom affords good, even holding ground, and at the anchorage there is a depth of water varying from 5 to 7 fathoms. Ships get into and out of the harbour with safety in all winds, at all times of the tide, by day or night. *Lights and lighthouses.* The northern half of the Red Sea is now very well lighted. There are four fine and well-appointed lighthouses, built and maintained in a very efficient manner by the Government, besides which, there is a large floating light-vessel anchored at the extremity of the spit on the eastern side of the entrance to the roadstead, which is so placed as to lead vessels straight up to the anchorage without having to alter their course for many miles before they reach Suez. The lighthouse at Zafaraneh, on the western coast of the gulf, is erected on an elevation of 14 feet above the high-water level. The light is a powerful fixed white light; the illuminating process is dioptric, or by lenses of the first order. It is reported as visible from the deck of a vessel 14 miles. A coral reef, with only 2 to 6 feet of water upon it, extends 1½ mile S.E. from the lighthouse, which renders it imprudent for vessels to pass within 3 miles of the beacon. The position of this light, as shown by Moresby's chart of the Red Sea, is *Lat.* 29° 6′ 20″ N., *Lon.* 32° 44′ E. The second light in order after passing the floating-light vessel at the entrance of the Suez Roads is on the Ras, or headland of Gharib, also on the western coast of the Gulf of Suez, in *Lat.* 28° 21′ N., *Lon.* 33° 7′ E., at a distance of about 50 miles south of the Zafareneh light. This light is raised on an iron frame-work, consisting of three stays, painted red, and is also placed on an elevation raising the light to a total height of 165 feet above the level of the sea. It is a fine powerful light, of French construction, and is visible from a distance of 20 miles. The next light, or third in order from the Suez light, is that on Ashrafi or Ushraffee reef, at the northern entrance, and on the western side of Jubal Strait, in *Lat.* 27° 47′ 33″ N., *Lon.* 33° 42′ 18″ E. This is a revolving white light, attaining its greatest brilliancy once every minute, the illuminating apparatus being also dioptric, or by lenses of the first order. It is raised on a structure of open iron-work, 140 feet high from base to vane, the light itself being 125 feet above the level of the sea; the surface of the reef is a-wash at low water. This light should be seen in clear weather from a vessel's deck at a distance of 18 miles. The fourth light is on a reef called by the natives Aboo-l-Keisan, but known as the Dædalus reef. This reef is situated nearly in the middle of the Red Sea, about 207 miles S.S.E. ½ E. of the Ashrafi lighthouse. There is no anchorage nor shoal near it, the water being very deep all round close to its edge. The reef itself is oval in shape, about 5,000 feet long, N.W. and S.E., by 1,800 feet wide, and its surface is almost always under water. The lighthouse is placed 200 yards from the south-eastern extremity of the reef; it is a structure of iron, partially open, 70 feet high from base to vane. The light, which is a fixed white light, being at an elevation of 61 feet above the mean level of the sea, is visible in clear weather at a distance of 14 miles. *Maritime Canal.* The opening of this canal has already produced a marked effect on the communications with the East by the way of the Mediterranean and the Red Sea. Freights were formerly prohibitory for all but valuable cargo, whereas now the most bulky produce and raw materials find their way to Europe *viâ* Egypt, and raw cotton in bales, hides, oils, seeds, &c., are conveyed to Alexandria by rail, and thence shipped for Europe, notwithstanding the facilities afforded by water, while through the Suez Canal even coals are carried on freight by steam-vessels to Suez, as well as to the Indian ports. According to the report of 1872, in 1870, 486 vessels, giving a total tonnage of 435,911 tons, passed through the canal. In 1871, 765 vessels, giving a total tonnage of 761,467 tons, passed from Suez to Port Said, and *vice versa*, showing an increase of 279 vessels and 325,556 tons. Seventy per cent. of the tonnage which passed through during 1871 did so under the British flag, and of the 611,797 tons which passed through during the first six months in 1873, 73 per cent. were in like manner under our flag. The number of vessels built and still building expressly for the purpose of trading with India and China, *viâ* the Suez Canal, points clearly to the expectation of increasing trade. The canal has already cost £10,000,000 exclusive of interest.

DIRECT TRADE IN BRITISH VESSELS FROM AND TO GREAT BRITAIN AND BRITISH COLONIES.

ENTERED.								CLEARED.							
Total Number of Vessels.			Total Tonnage.			Total Number of Crews.	Total Value of Cargoes.	Total Number of Vessels			Total Tonnage.			Total Number of Crews.	Total Value of Cargoes.
With Cargoes.	In Ballast.	Total.	With Cargoes.	In Ballast.	Total.			With Cargoes.	In Ballast.	Total.	With Cargoes.	In Ballast.	Total.		
112	..	112	157,057	..	157,057	14,895	Unkn.	113	..	113	155,920	..	155,920	14,736	Unkn.

INDIRECT OR CARRYING TRADE IN BRITISH VESSELS FROM AND TO OTHER COUNTRIES.

ENTERED.

Countries whence Arrived.	Number of Vessels.			Tonnage.			Number of Crews.	Value of Cargoes.
	With Cargoes.	In Ballast.	Total.	With Cargoes.	In Ballast.	Total.		
From Jeddah .	9	..	9	5203	..	5203	417	Unknown.
Yambo .	1	..	1	548	..	548	65	
Busorah	1	..	1	866	..	866	20	
Pt. Said	1	..	1	471	..	471	55	
	12	..	12	7088	..	7088	557	

CLEARED.

Countries to which Departed.	Number of Vessels.			Tonnage.			Number of Crews.	Val of Cargoes.
	With Cargoes	In Ballast.	Total.	With Cargoes.	In Ballast.	Total.		
To Jeddah .	10	..	10	5726	..	5726	457	Unknown.
Ismailieh .	..	3	3	..	822	822	27	
Port Said for orders	..	6	6	..	2717	2717	115	
Constantinople, ditto	..	2	2	..	554	554	28	
	10	11	21	5726	4093	9819	617	

The Government system of weights in use on the railway is not quite consistent. The Administration reckons 22 kantars of 100 Egyptian lb. each to 1 ton English. The Egyptian lb. is 144 dirhems, and each dirhem, according to the weight of the Egyptian gold coin, 48 grains English, but of the Turkish nearly 49½ grains, while the dirhem of Constantinople and of Egypt are supposed to be identical. The result of the Egyptian standard is that an Egyptian cantar should weigh 98·742 lb. English. The kantar in practice does not generally exceed 98½ lb. English. However, 22 kantars of 98·742 lb. each give 2,172 lb. English, or 68 lb. less than the weight of an English ton. The practical effect is this: that if a person sent goods weighing an English ton to be carried by the railway, he would find that he had to pay, not for 22 kantars, as stated in the railway tariff tables, but for 23 kantars. All such deviations from regularity are opposed to the interests and just exigencies of trade. *Money.* The value of the piastre as against the English sovereign is 2·461538*d.*; 97½ Egyptian piastres are equal to 1 English sovereign, and the gold piastre piece, or, as it is called, "Guinea Egyptian," is equal to £1 0*s.* 6·1538*d.* Yet the value of an English shilling, if not worn, is only 4½ Egyptian piastres, whence it follows that 20*s.* in English silver are only worth 90 piastres Egyptian, and that an English sovereign is the equivalent in British silver coins in Egypt of 21*s.* 8*d.* *Bank.* The only banking establishment here is a branch of the Imperial Ottoman Bank. *Exchange.* The rates of exchange are ruled by those of Alexandria, which are subjected to an addition of 1 per cent. in favour of the bank.

ELEPHANT'S TAIL (HAIR OF). This article is made into rings, bracelets, and other female ornaments for the natives of India.

ELEPHANT'S TEETH. These are obtained in South Africa, Ceylon, Burmah, &c. Much of that which comes to China is brought from Siam in junks; the northern ports of Siam, Cambodia, and the confines of Burmah supply that market. The teeth should be chosen without flaws, solid, straight, and white; for, if cracked or broken at the point, or decayed inside, they are much less valuable.

EMBARGO [Sp. *Embargo*, an impediment], a public prohibition forbidding ships to sail, generally adopted with a view to impending hostilities.

EMERALD [Ger., Du., Da., and Sw., *Smaragd*, Fr *Emeraude*, It. *Esmeraldo*] is one of the most beautiful of all the class of coloured gems when perfect; its colour a pure green. Our jewellers distinguish emeralds into two kinds, the Oriental and Occidental. The emeralds of the East Indies are finer than those of any other part of the world; but as these are not often met with, the dealers call the American emeralds the Oriental. The genuine stone is found of various sizes, but usually small; great numbers are met with of about the 16th part of an inch in diameter, and they are found from this size to that of a walnut. The emerald is next in hardness to the ruby, and varies in colour from the pale to the perfect green.

EMERALD MINES *of Muzo* (The) are situated in the state of Bogota, one of the united states of Columbia, and are about four days' journey from Bogota. It is evident that these mines were known and worked long before the discovery of America and the conquest of New Granada by the Spaniards. When an expedition came about 1553 to reduce the tribe called Los Muzos to the Spanish rule, these Indians were found to possess a large quantity of emeralds. It is not easy to see how they worked the mines, as they had no tools of iron. It is supposed that they had found the stones in the bed of the mountain torrents; for it sometimes happens that the winter rains produce great land slides, which lay bare large veins of emeralds, the stones in which are washed out by the waters. But these gems are of a very inferior quality; they resemble those which are still found in the Indian burial-places, or in the lakes into which the Indians used to throw their relics during their contests with the Spaniards. However this may have been, the mines of Muzo were worked soon after the arrival of the Spaniards, on a large scale, both in the open air and by means of subterranean galleries; but about the middle of the eighteenth century the mines were abandoned, no one knows why. It was not until after the war of independence, and the expulsion of the Spaniards, that they were resumed. The mines were naturally taken possession of by the Republic, and let out to individuals and companies. In 1844 a Columbian named Paris carried a large quantity of emeralds to Europe and the United States, many of which he sold for considerable prices. He died a rich man. In 1864 a French company obtained a grant of the mines for ten years, for an annual payment of 14,700 dols. (£3,000), together with a monopoly of all emeralds in Columbia, the government binding itself to prohibit the working of any other mines which might exist in the territory of the Union. This company is now in possession of Muzo, where the works are directed by a French engineer. In the opinion of this gentleman the mountains of Muzo are very rich in emeralds, the quantity hitherto extracted being almost inappreciable. The principal mine now worked is pierced in every direction with galleries made by the Spaniards. Since 1825 it has been worked in the open air; an immense number of gems have been found, many of them of great value. After this mine shall have been exhausted, which will not be for many years, not a thousandth part of the ground containing diamonds will have been touched. This consists of a chain of mountains which extend beyond human sight. At two days' journey from Muzo there is another mine called Lasquez, which was just touched by the Spaniards, and is evidently very rich. All this ground, including Lasquez, bears traces of the presence of the Spaniards; and as the geological formation is the same in the whole neighbourhood, it is clear that the day is far distant when these mountains will be exhausted. The mountains of Muzo belong to the lower formation of chalk. The emeralds are found in two distinct layers; the first or upper one composed of a calcareous bitumen, which is black and friable; the second lower down, also of calcareous bitumen, but hard and compact. These two layers are generally separated from each other by a distance of from 17 to 22 yards. In the upper layer are found the veins which yield the "nests" of emeralds—that is to say, a number of these gems massed together. But after one of these nests the vein disappears, being crossed by others of a different kind, which run in a different direction to those containing the emeralds. These latter veins are called "ceniceros," from their ashy colour; they are generally horizontal, whilst the emerald veins are perpendicular. They all run from N.E. to S.W. The veins of the lower layer are more regular, and are followed for 50 to 60 yards, and even more. "Nests" of emeralds are very seldom found in them, but they are more easy of extraction. When veins of fluor-spar well crystallized are met with, the emerald is not far off; the presence of rock-crystal is also a good sign, as likewise that of a pretty pyramidal shape of the colour of honey, called "Parisite." The mine of Muzo is worked both by galleries and in the open air: the latter method, although more expensive, is more profitable, in consequence of the great irregularity of the veins, which are thus more easily got at. All the emeralds now extracted are sent to Paris, where they are cut, an operation which causes them to lose more or less of their weight and size, according to the degree of crystallization and of purity. It is impossible to determine the number of carats annually taken from the mines of Muzo. The production is very variable, depending upon the number of veins which may be found, and their richness. Whole months may pass without a single emerald being found, whilst 100,000 carats may be procured in a few days. It is also impossible to fix the mean value of a carat of emerald, as, when the stone is large and of a very dark colour, and perfectly pure (which latter condition is extremely rare), it may be worked up to £20 a carat, whilst stones of a light colour, full of flaws, and divided into small fragments, are not worth 5s. a carat. These are then called "morallos," and have scarcely any value. There are no means of ascertaining the mean annual quantity of emeralds which has been previously or is now procured. This is the Company's secret, which it preserves from fear of the competition which will arise when it applies to government for a renewal of its lease. It is, however, certain that, notwithstanding the expense of working, its financial condition is prosperous. [We are indebted for this interesting account to Mr. Bunch's report to the Foreign Office.]

Essential or **Volatile Oils** occur in the stems, leaves, flowers, and fruit of many odoriferous plants, and are procured by distillation along with water: they are called essences, and contain the concentrated odour of the plant. They usually exist ready formed, but occasionally they are obtained by a kind of fermentation, as oil of bitter almonds and oil of mustard. Some of them consist of carbon and hydrogen only—as oil of turpentine from Juniperus Sabini, oil of oranges and lemons, from the rind of the fruit, and oil of neroli from orange-flowers. Another set contain oxygen in addition, as oil of cinnamon; otto or attar of roses from various species of rose, especially Rosa centifold; oil of cloves from Caryophyllus aromaticus. Those principally obtained from tropical shrubs and plants are citronella, oil of oranges and lemons, from the rind of the fruit oil; of cinnamon and cloves, croton oil, &c. The oil of sandal or Sanders wood, grown on the Malabar coast, is much esteemed as a perfume.—*Simmonds.*

Emery [Ger. and Sw. *Smirgel*, Fr. *Emeril*, *Emeri*, It. *Smeriglio*, *Smeregio*], a rich iron ore, found in large masses of no determinate shape or size, extremely hard and very heavy. It is usually of a dusky brownish red on the surface, but when broken is of a fine bright iron grey. It is imported from the island of Naxos, where it exists in great abundance, and is also found in Sweden, Germany, Italy, England, and many other places. Its specific gravity is about four. It consists of almunina 86, silica 3, oxide of iron 4. The emery of commerce is extensively used in Europe, and imported into England for grinding and polishing metals.

Enamel [Fr. *Email*, Ger. *Schmelz*, It. *Smalto*], a kind of coloured glass used in enamelling and painting in enamel. Enamels have for their basis a pure crystal glass or grit ground up with a fine calx of lead and tin prepared for the purpose, with the addition usually of white salt of tartar. The best comes chiefly from Venice, in little round cakes, about six inches in diameter and half an inch thick.

Europe had 56 States before the Italian war, while now it has only 18, with a total superficial area of 179,362 square miles, and a population of 300,900,000. Of these the German Empire comprises 9,888 square miles, and a population of 40,106,900 (according to the census of 1867). The principal States in Europe with a population of more than 25 millions are:—Russia, 71; Germany, 40; France, 36¼; Austro-Hungary, 36; Great Britain, 32; and Italy, 26¼; their total population is, therefore, four-fifths of that of the whole of Europe. A century ago, before the partition of Poland, the Great Powers only possessed one-half of the then population of Europe, thus:—Russia, 18 millions; Austria, 17; Prussia, 5; England, 12; and France, 26: total, 80. The number of Roman Catholics in Europe generally is now 148 millions—35½ in France, 28 in Austria, 26 in Italy, 16 in Spain, and 14½ in Germany; of Greek Catholics, 70 millions—54 in Russia, 5 in Turkey, 4 in Roumania, and 3 in Austria; of Protestants, 73 millions—25 in Germany, 24 in England, 5½ in Sweden and Norway, 4 in Russia, and 3½ in Austria; of Jews, 4,800,000—1,700,000 in Russia, 822,000 in Austria, 1,300,000 in Hungary, and 500,000 in Germany. Dividing Europe into nationalities, there are 82,200,000 of the Slavonic race, 97,500,000 of the Latin races, and 93,500,000 of the Germanic race.

EXCHANGE, among merchants, is the mode by which those of one country pay the debts due by them to those of another without the positive transmission of specie or bullion. The means of doing so are facilitated by those representatives of money called bills of exchange. The comparative value of the respective currencies of different countries is the foundation of exchange. This value is estimated by the weight and purity of the gold and silver coin of each country, and is called the *par*, or equality of exchange. The *rate* of exchange—that is, the actual price for which the money of one country is sold in another—though founded on the par, varies according to the circumstances in which the two countries may be placed. It is affected principally and legitimately by the actual balance of trade between the two countries, and the consequent necessity of remittances to discharge the debts which may have been contracted between them. But this effect will not be seriously felt if the *general* balance of trade is at the time in favour of the country having occasion to remit. In that case some other country must be indebted to it, and from which a transfer of debt may be made with greater advantage. To ascertain or discover that country is the object of what is called the arbitration of exchange. This is of two kinds, simple and compound. *Simple arbitration* is when the exchanges among three places only are concerned, and the arbitrated price is such a rate of exchange between two of the places as shall be in proportion to the rate assigned between each of them and a third. All questions in this rule may be performed by one or more operations in the rule of three. *Compound arbitration* has respect to the exchange of four or more different places, and its utility consists in discovering the best and most advantageous method of negotiating exchanges with different countries and cities, or, when several different sorts of things are compared together as to their value, to find out how many of one sort are equal to another. But compound arbitrations are uncommon, as there are few houses capable of thus extending their negotiations; and, besides, the liability to unfavourable changes becomes much more increased. In *MacCulloch's* Dictionary the arbitration of exchange is explained very clearly:—"When a merchant in London, for example, means to discharge a debt due by him in Paris, it is his business to ascertain not only the state of the direct exchange between London and Paris, and consequently the sum which he must pay in London for a bill on Paris equivalent to his debt, but also the state of the exchange between London and Hamburg, Hamburg and Paris, &c., for it frequently happens that it may be more advantageous for him to buy a bill on Hamburg, Amsterdam, or Lisbon, and to direct his agent to invest the proceeds in a bill on Paris, rather than remit directly to the latter. Thus, if the exchange between London and Amsterdam be 35*s.* Flemish (old coinage) per pound sterling, and between Paris and Amsterdam 1*s.* 6*d.* Flemish per franc, then in order to ascertain whether an indirect remittance to Paris would be most advantageous, we must calculate what would be the value of the franc in English money if the remittance be made through Holland, for if it be less than that resulting from the direct exchange, it will obviously be the preferable mode of remitting. This is determined by stating as 35*s.* Flemish (the Amsterdam currency in a pound sterling) : 1*s.* 6*d.* Flemish (Amsterdam currency in a franc) : : £1 : 10*d.*, the proportional or arbitrated value of the franc. Hence, if the English money or bill of exchange to pay a debt in Paris were remitted by Amsterdam, it would require 10*d.* to discharge a debt of a franc, or £1 to discharge a debt of 24 francs; therefore, if the exchange between London and Paris were at 24, it would be indifferent to the merchant whether he remitted directly to Paris, or indirectly, *via* Amsterdam; but if the exchange between London and Paris were above 24, then a direct remittance would be preferable; while if, on the other hand, the direct exchange were less than 24, the indirect remittance ought as plainly to be preferred. Suppose, to borrow an example from *Kelly* (Universal Cambist), the exchange of London and Lisbon to be at 68*d.* per milree, and that of Lisbon on Madrid 500 rees per dollar, the arbitrated price between London and Madrid is 34*d.* sterling per dollar: for as 1,000 rees : 68*d* : : 500 rees : 34*d.* But if the direct exchange of London on Madrid be 35*d.* sterling per dollar, then London, by remitting directly to Madrid, must pay 35*d.* for every dollar; whereas by remitting through Lisbon he will pay 34*d.*; it is, therefore, the interest of London to remit indirectly to Madrid through Lisbon. On the other hand, if London draws directly on Madrid, he will receive 35*d.* sterling per dollar, whereas by drawing indirectly through Lisbon he will receive only 34*d.*; it is therefore the interest of London to draw directly on Madrid. Hence the following rules:—(1.) Where the certain price is given, draw through the place which produces the lowest arbitrated price, and remit through that which produces the highest. (2.) Where the uncertain price is given, draw through that place which produces the highest arbitrated price, and remit through that which produces the lowest." In this country all exchange business is conducted by brokers, who call upon the leading merchants and bankers, and discover whether they are buying or selling for the outward mail. The price is fixed by a few of the most influential, at which the greater part of the transactions are settled. The brokerage charged is 1-10th per cent. On Tuesdays and Fridays (post days), the days when all exchange business is transacted, the "course of the Exchange" is published at Wetenhall's. In India all the exchange business is done through brokers, who, however, receive ½ per cent for their trouble. To illustrate an operation in that country, let us say that C, in Madras, ships a consignment of cotton to D, in Liverpool, and as a long time will elapse before the vessel arrives and before the produce is disposed of, C draws a bill on D, payable at six months' sight, or whatever the usance may be, for a sum under the value of the cotton—say £1,000. This bill he hands to a banker, who buys it at a certain rate of exchange, and pays over to C the money. The bill is then sent to Liverpool, where, in the course of time, it is paid by D out of the proceeds of the cotton. The rate of exchange in this case depends mainly upon the quantity of gold arriving in or leaving the country, as may be thus shown:—The par is 2*s.* per rupee for bills on London; but, perhaps, owing to large arrivals of gold, it has risen to 2*s.* 0⅛*d.* or ½ per cent. above par, and will continue to rise until the exportation of bullion commences, which will take place whenever the bankers refuse to draw at better rates than what gold may be shipped for. Suppose, however, the bill has been sold at 2*s.* 0⅛*d.* per rupee, and D wishes to buy a remittance on London, the loss would be in the first place £5 4*s.* 2*d.* on the £1,000. D, anticipating a further rise, might perhaps wait until the rate rose to 2*s.* 3-16*d.*, when, if he bought his remittance, the loss would be recovered, and a profit of ¼ per cent. made. Although gold is the main cause of the fluctuations in exchange, the exportation of produce, or the importation of manufactured goods, affects the rates very materially; indeed, to operate at all successfully, the movements in the staple articles of commerce must be watched very carefully, bearing in mind that the exchange is always against this country when more produce is imported than the value of what is exported in our own productions.

F

Facet, or Facette, among jewellers, the name of the little faces or planes to be found in brilliant and rose diamonds.

Factor is an agent or correspondent employed to transact business for another or others. He usually resides abroad, or some place separated by distance from his principal. He is authorized, either by a power of attorney or letter, to act for his principal in the purchase or sale of goods, and in the management of all the operations, financial or otherwise, that are conducted and carried out by merchants. He receives from the person or persons whom he represents, in lieu of wages, a commission or factorage, according to the usage of the place where he resides, or the business he transacts. A factor is expected to keep strictly to the tenor of his instructions, as a deviation from them, even in the most minute particular, exposes him to make ample satisfaction for any loss that may accrue from his non-observance of them. When unlimited orders are given to factors, and they are left to buy and sell on the best conditions they can, whatever the result may be—a loss, for instance, instead of a profit—they are not held liable, as it is to be presumed they acted for the best, and were governed by the dictates of prudence. A factor should always be punctual in the advices of his tranactions in sales, purchases, and in financial matters. "*With respect to purchases.* As no agent can lawfully exceed his orders, it follows that, if he do so, his principal, though he may, perhaps, insist upon keeping them, if he think it for his advantage, has a right to refuse the goods improperly purchased; and it has been said that in such case, if he have advanced money on them, he may, instead of returning, take upon himself to dispose of them as factor for the agent who transgressed his orders. But then he must repudiate the transactions and give notice of his disagreement to the agent, within a reasonable time, else he will be taken to have adopted it, and the loss, if any, will fall upon himself; and it has been intimated that though an agent exceed the price named in his instructions, yet, if by means of doing so, he effect a saving on the same goods equal in amount to the excess price, equity at least would consider him as justified."—*Smith's Mercantile Law.*

Factory, an establishment where a number of persons are employed for the production of some article of manufacture, generally by means of steam power. *Return of Factories.* England and Wales. *Cotton.* No. 2,405; combing machines, 8,282; spinning spindles, 30,478,228; doubling spindles, 2,028,732; power-looms, 344,719; power-loom weavers, 134,261; billy spindles or condensers, 32,818; amount of moving power, steam, 171,403; water, 7,673; total number of persons employed, 357,052. *Woollen Factories.* No. 1,420; combing machines, 963; spinning spindles, 3,822,916; doubling spindles, 128,274; power-looms, 42,571; power-loom weavers, 30,157; billy spindles, 1,045,978; condensers, 1,178; amount of moving power, steam, 34,880; water, 7,666; total persons employed. There are 104 shoddy factories; 687 worsted; 128 flax; 19 hemp; 8 jute; 45 elastic; 4 felt; 90 hosiery; 186 lace; 587 silk. *Scotland*, 131 cotton factories; 193 woollen; 14 worsted; 134 flax; 4 hemp; 31 jute; 2 horsehair; 2 hosiery; 2 silk. *Ireland.* 13 cotton factories; 45 woollen; 2 worsted; 143 flax; 2 jute; 2 silk. *Total factories for the United Kingdom*, 6,403; combing machines, 11,100; spinning spindles, 40,993,244; doubling spindles, 2,975,626; power-looms, 546,619; power-loom weavers, 247,286; billy spindles, 1,148,561; condensors, 1,403; gigs, 2,784; pulling stocks, 3,981; moving power, steam, 336,730; water, 29,380; total number of persons employed, 854,243.

Factory and Workshop Act, 1871. *Whereas due proof has been made to the satisfaction of me*, the undersigned, Henry Austin Bruce, one of her Majesty's principal Secretaries of State, that the nature of the business of the trades carried on in factories and workshops, specified in the schedule hereto, depends upon the weather and the seasons of the year, and requires that young persons of at least 14 years of age and upwards, and women working in such factories and workshops, should be employed in the manner hereinafter mentioned: Now I, the said Henry Austin Bruce, in pursuance of the powers vested in me by the 1st and 2nd articles of the schedule annexed to the Factory and Workshop Act, 1871, do, by this my order, give permission to occupiers of the said factories and workshops to employ young persons of at least 14 years of age, and women, working in such factories and workshops, for a period not exceeding 14 hours in any one day. Provided that:—1. They shall not be so employed except between the hours of six in the morning and eight in the evening, or where permission has been given by the Secretary of State to work between the hours of seven in the morning and seven in the evening, or of eight in the morning and eight in the evening; then, except between the hours of seven in the morning and nine in the evening, or eight in the morning and ten in the evening, as the case may be. 2. In addition to the time allowed for meals, they shall be allowed half-an-hour for a meal after the hour of five in the evening. 3. They shall not be so employed for more than 96 days in any period of twelve months, or for more than five consecutive days in any one week. 4. They are not to be so employed at any one time for more than one month from the date of a notice signed by the inspector of factories for the district, and hung up in the factory or workshop. Schedule.—Tailors; dress, mantle, and paletot makers; milliners; hat, cap, and bonnet makers; shirt-collar makers; boot and shoe makers; braid, fringe, and fancy trimming makers; artificial flower-makers; bon-bon and Christmas present makers; valentine makers; fancy-box makers; almanack-makers and finishers; firewood makers.—(Signed) H. A. Bruce. Whitehall, Dec. 28, 1871.—*London Gazette.*

Fair, a meeting held at stated times and places, for purposes of trade. Such meetings on a small scale come more appropriately under the category of markets, while the term *fair* generally implies a commercial gathering of greater magnitude, although it is sometimes applied to assemblies for other purposes. Thus, we hear of agricultural fairs, where the cattle and the agricultural produce of the district are exhibited by farmers and dealers; or of charity or fancy fairs, &c. Fairs for commercial purposes have been held under different names in all times and in all countries, and are probably coeval with commerce itself, since, especially before the era of railways and steamboats, some rallying point of the kind was required for the general interchange of commodities. *Principal British Fairs.* "Among these may be specified Stourbridge in Cambridgeshire, once the greatest fair in England. Bristol has two considerable fairs, one in March, and one in September. Exeter December fair, for cattle, horses, and most sorts of merchandise. Weyhill fair, in Hampshire (Oct. 10), has probably the greatest display of sheep of any fair in the kingdom. Bartholomew fair, in London, used to be of considerable importance, but latterly it was appropriated to shows of wild beast and such like exhibitions, and was very properly suppressed. St. Faith, near Norwich (Oct. 17), is the principal English fair for Scotch cattle: they are sold to the graziers and feeders of Norfolk, Suffolk, Essex, &c., by whom they are fattened for the London markets, where they are met with in great abundance. But, besides those sold at St. Faith's, large numbers of Scotch cattle are disposed of at Market Harborough, Carlisle, Ormskirk, and other places. Ipswich has two considerable fairs, one in August, for lambs, and one in September, for butter and cheese; it is reckoned that above 100,000 lambs are annually sold at the former. Woodborough Hill, in Dorset, for West Country manufactures, as kerseys, druggets, &c. Woodstock October fair, for cheese. Northampton and Nottingham have each several large fairs for horses, cattle, cheese, &c. The August fair of Horncastle, in Lincolnshire, is the largest horse fair in the kingdom, many thousand horses being exhibited for sale during its continuance: it is resorted to by crowds of dealers from all parts of Great Britain, by several from the Continent, and sometimes even from North America. Howden, in Yorkshire, has also a very large horse fair, particularly for Yorkshire hunters. Devizes, in Wiltshire, has several large fairs, for sheep and cattle. There is usually a large display of cheese at the Gloucester April fair. A guild, or jubilee, commencing the last week of August, is held every 20th year at Preston, in Lancashire. The October fair of Market Harborough, Leicestershire, lasts 9 days, and a great deal of business is usually done in cattle, cheese, &c. Woodbridge Lady-day fair is celebrated for the show of Suffolk horses. Falkirk fair, or tryst, is one of the most important in Scotland for the sale of cattle and sheep. The October fair of Ballinasloe, in county Galway, is famous for the display o of seed cotton, equal to 1 lb. of clean fibre, at one shilling, and that an acre of land, 6 feet by 6, carries 1,031 trees, the gross value annually per acre would be £51 11*s*. The demand for Sea Island cotton is limited, but the diminished production of this kind in America, owing to the disorganization of labour, will probably afford the Feejeean planter an opportunity of selling all he can produce at a remunerative figure for some time to come. The kidney and Egyptian sorts are of larger growth, requiring to be planted 12 feet by 12 feet. They are sown in the same months as the Sea Island. The picking season is in July, a second and lighter crop can be gathered in December. The average yield of this cotton is 1,200 lb. per acre, yielding about 350 lb. of clean fibre, the value of which in Feejee is about £15 sterling. The following is an estimate of the land at present in cultivation by Europeans.

Acres in cotton = No. of bales of 350 lb.	2,400
Acres in coffee, corn, beans, yams, and vegetables generally, ⅓	800
Acres cleared and in course of cultivation	1,500
Total in cultivation	4,700
Estimated area of land held by Europeans	160,000
Uncultivated	155,300

The cultivation is carried on by labourers obtained from the neighbouring islands. The implements used are large knives and hoes. There are 30 gins and 5 steam-engines.

Cocoa-Nut Oils. The supply of cocoa-nut oil will continue to increase for some years to come, if the demand continues brisk. A thousand tons could be furnished by this group alone. To the natives it can hardly prove a profitable article, as their process of manufacture is tedious and laborious. In proportion as the cultivation of cotton engages their attention will the manufacture of oil be neglected by them. There is, however, no reason to believe that this will check the oil trade in the islands; but that, on the contrary, it will be the cause of its increasing in importance, as, up to the present time, although machinery has been employed to extract the oil, the result was not so profitable as was generally expected by the introducers, who frequently found their labours brought to a standstill by the refusal of the natives to supply them with nuts in sufficient quantities. They looked with jealousy on an undertaking that threatened to deprive them of the means of purchasing cloth, knives, &c., from the traders; and the oil that each could personally make was the only article of barter they possessed. *Cocoa-Nut Fibre* can be supplied in any quantity. *Coffee* has been introduced from Tonga, and there are about 20,000 trees in a flourishing condition. In the course a year or two, it is expected that coffee will form an important article of export from these islands. *Arrowroot* and *Tapioca* are found as troublesome weeds throughout the South Sea Islands. *Tobacco* grows well, but has hitherto received no attention from the European settlers, who are content to use it prepared in the native form. A quantity sent to Sydney on trial was not approved of, owing, it is thought, to a defect in the curing. The leaves are large and fine, and, if dealt with by experienced men, would turn out an important export. *Communication* between Feejee and the Australian Colonies is very uncertain and irregular. A certain number of vessels are engaged in the trade, but they all arrive generally about the same time, and during the remainder of the year the residents are dependent for the mails on any vessel that touches here on her way to Samoa, Tahiti, &c. The average passage to Feejee from Sydney is 20 days' sail, but from Feejee to Sydney—on account of the favourable winds—it seldom exceeds 12 days. *Imports*. The articles most in demand are *Fabrics*. Cotton prints, those known as navy blues, are preferred to all others; blue dungaree, Turkey reds, and unbleached calicos, blankets (blue and red), red serge shirts, red worsted and cotton thread. *Hardware*. Wedge axes, bench axes, hatchets, 12 and 15 inch butchers' knives, razors, muskets, flints, gunpowder, lead, fish-hooks, needles, and small white Venetian beads. These include every article that can be properly sold among the natives. *Trade*. The exports in 1865 amounted to £24,175; 1866 to £30,970; and 1867 to £39,960 Imports, the total value of, may approximate £29,000.

FELLOWSHIP, or company in commerce, is when two or more join their stocks and trade together, dividing their gain or loss proportionably. Fellowship is either with or without time. Questions without time, or in the single rule of fellowship, as it is frequently called, are wrought by the following proportion:—As the whole stock is to the whole gain or loss, so is each man's particular stock to his particular gain or loss. Example 1. A, B, and C make a joint-stock; A puts in £460, B £510, and C £450; they gain £340; what part of it belongs to each? In order to find the answer to this question, find the total of the joint-stock, viz.: A's stock, £460 + B's stock, £510 + C's stock, £480 = £1,450 the total stock. Then (1), To find A's share of the gain, state as follows: If £1,450: £340: : £460, which being worked by the rule of three, the answer will be £107 17*s*. 2¾*d*. for A's share of the profit. (2), B's share of the gain, by stating thus: If £1,450: £340: : £510 will be found to be £119 11*s*. 8¾*d*. if worked by the same rule. (3). C's share will appear £112 11*s*. 0½*d*. when worked as before, being stated thus: If £1,450: £340 : : £450. Example II. Suppose three partners, A, B, and C, make a joint-stock in this manner: A puts in £24, B £32, and C £40, in all £96, with which they trade and gain £12—required each man's true share of that gain. The first operation for A's part of the gain will stand thus:—

£96 : £12 : : £24 : £3 = A's gain.
£96 : £12 : : £32 : £4 = B's gain.
£96 : £12 : : £40 : £5 = C's gain.
Proof.—£3 + £4 + £5 = £12 = the whole gain.

That is, if the total of all their gains amounts to the whole gain, the work is true; if not, some mistake has been made. *Fellowship with time*, usually called the double rule of fellowship, because every man's money is to be considered with relation to the time of its continuance in the joint-stock. It is worked thus: Multiply each man's stock by the respective time he puts it in for, and add all the products, the total of which must be your first number through all the statings. The gain or loss, the second, as before, and each man's stock, multiplied by its time, the third. Example: A puts in company £560 for eight months, B £279 for ten months, and C £735 for six months; they gain £1,000. What share of it must each have? For the solution of this question proceed as follows: A's stock, £560 × 8 its time = £4,480; B's stock, £279 × 10 its time = £2,790; C's stock, £735 × 6 its time = £4,410. Then £4,480 + £2,790 + £4,410 = £11,680. Now (1), To find A's share of the profit, state thus: £11,680 : £1,000 : : £4,480, which, being worked by the rule of three, the answer will be £383 11*s.* 2¾*d.* for A's share of the gain. For finding B's share of the gain, state thus: If £11,680 : £1,000 : : £2,790, and, working as before directed, the answer will be £238 17*s.* 4¾*d.* To find C's proportion of the profit, say, if £11,680 : £1,000 : : £4,410 = the result will be £337 11*s.* 4½*d.*

Felt [Fr. *Feutre*, Ger. *Filz*], a material formed by working into a sheet wool or hair, upon the principle of their matting together.

Felting [Fr. *Feutrage*, Ger. *Filzen*] is the process by which loose flocks of wool, and hairs of various animals, as the beaver, rabbit, hare, &c., are mutually interlaced into a compact textile fabric. The first step towards making felt is to mix, in the proper proportions, the different kind of fabrics intended to form the stuff, and then, by the vibratory strokes of the bowstring, to toss them up in the air, and to cause them to fall as regularly as possible on the table, opened, spread, and scattered. The workman covers this layer of loose flocks with a piece of thick blanket-cloth, slightly stiffened and moistened. He presses it with his hands, moving the hairs backward and forward in all directions. Thus the different fibres get interlaced, by their ends pursuing ever-tortuous paths; their vermicular motion being always, however, root foremost. As the matting gets denser, the hand-pressure should be increased, in order to overcome the increasing resistance to the decussation. A first thin sheet of soft, spongy felt being thus formed, a second is condensed upon it in like manner, and then a third, till the requisite strength and thickness be obtained. These different pieces are successively brought together, disposed in a way suitable to the wished-for article, and united by continued dexterous pressure.—*Ure.*

Fenks, the refuse of whale-blubber. It is now used as a manure, and has been employed in the manufacture of Prussian blue.

Fenugreek, a herb cultivated throughout Greece and the East as an article of food. The seeds, which alone are used, are eaten, both boiled and raw, mixed with honey. It is a native of Switzerland and Bohemia. The flowers are of a delicate blue colour, and have an odour like that of Balsam of Peru. This odour increases by drying, and the Italian perfumers use it extensively. The Swiss use it to flavour their cheese.

File [Fr. *Lime*, Ger. *Feile*], a steel instrument used in cutting metal, ivory, wood, &c. "When the teeth of these instruments are formed by a straight, sharp-edged chisel extending across the surface, they are properly called files, but when, by a sharp-pointed tool, in the shape of a triangular pyramid, they are termed rasps. The former are used for all the metals, as well as ivory, bone, and wood; the latter for wood and horn. Files are divided into two varieties, from the form of their teeth. When the teeth are a series of sharp edges, raised by the flat chisel, appearing like parallel furrows, either at right angles to the length of the file, or in an oblique direction, they are termed single-cut. But when these teeth are crossed by a second series of similar teeth, they are said to be double-cut. The first are fitted for brass and copper, and are found to answer better when the teeth run in an oblique direction. The latter are suited to the harder metals, such as cast and wrought iron and steel. Such teeth present sharp angles to the substance which is penetrated by them; while single-cut files would slip over the surface of these metals. The double-cut file is less fit for filing brass and copper, because its teeth would be very liable to be clogged with the filings. Files are also called by different names, according to their different degrees of fineness. Those of extreme roughness are called rough; the next to this is the bastard cut; the third is the second cut; the fourth, the smooth; and the finest of all, the dead smooth. The very heavy square files, used for heavy smith-work, are sometimes a little coarser than the rough; they are known by the name of rubbers. Files are also distinguished from their shape, as flat, half-round, three-square, four-square, and round. The first are sometimes of uniform breadth and thickness throughout, and sometimes tapering. The cross section is a parallelogram. The half-round is generally tapering, one side being flat and the other rounded. The cross section is a segment of a circle, varying a little for different purposes, but seldom equal to a semicircle. The three-square generally consists of three equal sides, being equilateral prisms, mostly tapering. Those which are not tapering are used for sharpening the teeth of saws. The four-square has four equal sides, the section being a square. These files are thickest in the middle, as is the case with the smith's rubber. In the round file, the section is a circle, and the file generally conical. The heavier and coarser kind of files are made from the inferior marks of blistered steel. Those made from the Russian iron, known by the name of old sable, called, from its mark, CCND, are excellent. The steel made from the best Swedish iron, called hoop L, or Dannemora, makes the finest Lancashire files, for watch and clockmakers. The steel intended for files is more highly converted than for other purposes, to give them proper hardness. It should, however, be recollected that if the hardness be not accompanied with a certain degree of tenacity, the teeth of the file break, and do but little service. Small files are mostly made of cast steel, which would be the best for all others if it were not for its higher price. It is much harder than the blistered steel, and, from having been in the fluid state, is entirely free from those seams and loose parts so common to blistered steel, which is no sounder than as it comes from the iron forge before conversion."—*Ure*

Filigree [Ger. *Filigran* or *Feine Drahtgeflecht*, Fr. *Filigrane*], is intertwisted fine wire, used for ornamenting gold and silver trinkets. The wire is seldom drawn round, but generally flat or angular; and soldered by gold or silver solder with borax and the blowpipe. The Italian *filigrana* is composed of filum and granum, or granular net-work, because the Italians, who first introduced it, placed small beads upon it.

Finland (Suomemna, the region of lakes and swamp) is a government of Russia, comprising, besides the old Swedish province of Finland, the two Lapmarks of Kami and Torned and the district of Wiborg. It lies between N. *lat.* 59° 50′ and 70° 6′ and E. *long.* 20° 30′ and 32° 45′, being bounded on the N. by Norwegian Fenmark, by Sweden W., and the Gulf of Bothnia, S. by the Gulf of Finland, and E. by the government of Petersburg, Olonetz, and Archangel. It is about 700 miles in length from N. to S., with an average breadth of about 185 miles. *Principal Towns*: Helsingfors (cap.), Abo (the former capital), Wiborg, Tavasphuas, Vasa, Uleaborg, and Tornea. *Crops.* The principal are barley and rye, but, owing to the nature of the surface and climate, a large portion of the land is only fit for pasture. *Mineral* productions are chiefly confined to iron, lead, sulphur, slate, and granite. A great number of excellent granite quarries have been opened, chiefly on the borders of the lakes, to secure the advantage of water carriage. *Exports.* The principal articles are fir, potash, pitch, and resin. The annual value of this trade in silver roubles, of the value of 3s. 2d. amounts to about 2,183,000. The chief *imports* are books, fish, iron, and steel, sugar, tobacco, dyewoods, cotton, spirits, fruits, salt, wine, and wove manufactures, of the annual value of about 2,660,000 silver roubles. The total *pop.* is 1,373,727.

Fire Arms, manufacture of, is divided into two branches—that of the metallic, and that of the wooden work. The first includes the barrel, the lock, and the mounting, with the bayonet and ramrod for military arms. The second comprises the stock and, in fowling-pieces, the ramrod. *Barrel.* Its interior is called the bore; its diameter, the calibre; the back end, the breech; the front end, the muzzle; and the closing of the back end, the breech-pin or plug. The barrel is generally made of iron. Most military muskets and low-priced guns were formerly fashioned out of a long slip of sheet-iron, folded together edgewise round a skewer into a cylinder. They were then lapped over at the seam, and welded together at a white heat. The most ductile and tenacious soft iron, free from all blemishes, must be selected for this slip. It is frequently welded at the common fold, but a proper air-furnace answers better, not being so apt to burn the iron, which should be covered with ashes or cinders. The shape of the bore is given by hammering the cylinder upon a steel mandril in a groove of the anvil. Six inches of the barrel at either end are left open for forming the breech and the muzzle by a subsequent welding operation; the extremity put into the fire being stopped with clay to prevent cinders getting into it. For every length of two inches there are from two to three welding operations, divided into alternating high and low heats, the latter being intended to correct the defects of the former. The breech and muzzle are not welded on the mandril, but upon the horn of the anvil. The breech being thicker in the metal, is more highly heated, and is made somewhat wider, to save labour to the borer. The barrel is finally hammered in the groove of the anvil without the mandril, during which process it receives a heat every two minutes. In welding, the barrel extends about two-thirds in length; and for muskets, is eventually left from 3 to 3½ feet long; but for cavalry pistols 9 inches. The outer surface is commonly polished upon a dry grindstone, but it is better finished at a turning-lathe with a slide-rest. Rifle barrels have parallel grooves of a square and angular form, cut within them, each groove being drawn in succession. These grooves run spirally, and form each an aliquot part of a revolution. From the chamber to the muzzle, rifles should not be too deeply indented: only so much as to prevent the ball turning round within the barrel, and the spires should be truly parallel, that the ball may glide along with a regular pace. The Parisian gun-makers, who are considered very expert, draw up the iron for the barrels at hand forges, in fillets of only one-ninth of an inch thick, one inch and a half broad, and four feet long. Twenty-five of these ribbons are laid upon each other, between two similar ones of double thickness, and the bundle weighing both, bound with wire at two places, serves to make two barrels. The breeching is of three kinds—the common, the chamber, plug or mortar. The common was formerly used for soldiers' muskets and inferior pieces. The second is a trifling improvement upon it. In the patent breeching the screws do not interfere with the touchhole, and the ignition is quicker in the main chamber. The only locks used now are those upon the percussion principle, as flint locks have ceased to be employed. Forsyth's lock was an ingenious contrivance. It has a magazine for containing the detonating powder, which revolves round a roller, whose end is screwed into the breech of the barrel. The priming powder passes through a small hole in the roller, which leads to a channel in communication with the chamber of the gun. The invention of the copper percussion cap was another great improvement upon the detonating plan. Nothing appears upon the plate of the lock but the cock or striking hammer, which inflicts the striking blow upon the percussion cap. It is concave, with a small metallic ring or border, called a shield or fence, for the purpose of enclosing the cap, as it were, and preventing its splinters doing injury to the sportsman, as also protecting against the line of flame which may issue from the touch-hole in the cap nipple. This is screwed into the patent breech, and is perforated with a small hole. A gun-maker (Mr. Redford) of Birmingham introduced a modification of the lock for small fire-arms, in which the application of pressure to the scar spring for discharging the piece is made by means of a plug, depressed by the thumb instead of the force of the finger exerted against the trigger. Mr. Somerville, of Currie, obtained a patent for a further invention to prevent the accidental discharge of fire-arms. It consists of hindering the hammer from reaching the nipple of a percussion lock, or the flint reaching the steel of an ordinary one, by the interposition of moveable safety-studs or pins, which protrude from under the false breech before the hammer of the lock, and prevent them from descending to strike. These safety-studs or pins are moved out of the way by the pressure of the right hand of the person using the gun only when in the act of firing, that is, when the force of the right hand or arm is exerted to press the butt-end of the stock of the gun against the shoulder, while the aim is taken and the trigger pulled. Mr. Richards, of Birmingham, patented a modification of the copper cap for holding the percussion powder, in which the powder is removed from the top of the cap, and brought nearer the mouth. An improvement upon the priming chamber was introduced by Mr. Lovell, of the Royal manufactory of guns at Enfield. He forms it into a vertical double-cone, joined in the middle by the common apex. The base of the upper cone being in contact with the percussion cap, presents the most extensive surface to the fulminate upon the one hand, while the base of the under one being in a line with the outer surface of the barrel, presents the largest surface to the gunpowder charge upon the other. *Guns, rifling of the barrels.* The outside of barrels is in general octagonal. After the barrel is bored and rendered truly cylindrical, it is fixed upon the rifling machine. This instrument is formed upon a square plank of wood 7 feet long, to which is fitted a tube about an inch in diameter, with spiral grooves deeply cut internally through its whole length; and to this a circular plate is attached, about 5 inches diameter, accurately divided into concentric circles with from 5 to 16 equal parts, and supported by two rings made fast to the plank, in which rings it revolves. An arm connected with the dividing graduated plate, and pierced with holes, through which a pin is passed, regulated the change of the table in giving the desired number of grooves to the barrel. An iron rod, with a moveable handle at one end, and a steel cutter in the other, passes through the rifling tube. The rod is covered with a core of lead one foot long. The barrel is firmly fixed by two rings to the plank, standing in a straight line on the table. The rod is then drawn repeatedly through the barrel, from end to end, until the cutter has formed one groove of the proper depth. The pin is then shifted to another hole in the dividing plate, and the operation of grooving is repeated until the whole number of riflings is completed. The barrel is next taken out of the machine and finished. This is done by casting upon the end of a small iron rod a core of lead, which, when besmeared with a mixture of fine emery and oil, is drawn for a considerable time by the workmen from the one end of the barrel to the other, till the inner surface has become finely polished. *Military rifles.* The intention in all rifles is to impart to the ball a rotary or spinning motion round its axis as it passes out through the barrel. This object was obtained in a certain degree in the rifles of the old pattern, by cutting seven spiral grooves into the inside of the barrel. But instead of this laborious and insecure process, the barrel is now cut with only two opposite grooves, and, the ball being formed with a projecting belt or zone round the equator, of the same form as the two grooves, it enters so readily into these hollows that little or no force is required to press it down upon the powder. So much more hold of the barrel is thus obtained, that instead of one-quarter of a turn, which was the utmost that could be given in the old way without danger of stripping the bolt, a whole turn round the barrel in its length can be given to the two-grooved rifles, whereby a far more certain and complete rotary motion is imparted to the ball. The grand practical result is that better practice has been performed by several companies of the rifle corps at 300 yards than could be produced with the best old military rifles at 150 yards, the soldier being meanwhile enabled to load with much greater ease and despatch. The belt is levelled to its middle line. This mode of rifling is not, however, new in England. In fact, it is one of the oldest on record, and appears to have fallen into disuse from faults in the execution. The idea was revived within the last few years in Brunswick, and it was tried in Hanover also, but with lens-shaped balls. The judicious modifications and improvements it has finally received have brought out all its advantages, and rendered ti, when skilfully used, a weapon of unerring aim, even at a distance of 700 yards.—*Ure.*

Fish-Hook, or, **Fishing-Hook** [*Fish-hooks*, Ger. *Angeln Fishangeln*, Du. *Hockur*, Fr. *Hameçons*], in general ought to be long in the shank, somewhat thick in the circumference, the point even and straight; the bend should be in the shank. For setting the hook on, use strong but small silk, laying the hair on the inside of the hook; for if it is on the outside the silk will fret it and cut it asunder.

Flag, a general name for colours, standards, antients, banners, ensigns, &c., which are frequently confounded with each other. The fashion of pointed or triangular flags, as now used, came from the Mahomedans upon their seizing Spain, before which time all the ensigns of war were stretched or extended on cross pieces of wood, like the banners of a church. *Flag* is more particulary used at sea for the colours or signals of shipping. To *heave* out the flag is to put out or put aboard the flag. To hang out the *white flag* is to ask for quarter; or it shows when a vessel has arrived on a strange coast that it has no hostile intention, but come to trade, or the like.

Flag-staves are staves set on the top-gallant masts, serving to let fly or unfurl the flag.

Flannel [Ger. and Sw. *Flannel*, Du., Da. and Rus. *Flanel*, Fr. *Flanelle*, *It. Flanella*], a kind of slight, loose woollen stuff, composed of a warp and weft, and in the case of hand-loom work, woven in a loom with two treadles, after the manner of baize. The flannels of England and those of Wales are most esteemed, of which large quantities are exported.

Flask [*Flasks*, Ger. *Flaschen*, Da. *Flasker*, Fr. *Flaçons*] is a thin glass bottle, which is generally used to hold Florence oil, and as such is imported from Italy. The flasks are always wickered, and then packed in small chests and half chests.

Flat, on board ship, is to haul in the fore-sail by the sheet as near the ship's side as possible, which is done when a ship will not fall off from the wind.

Flax [Ger. *Flacks*, Du. *Vlasch*, Fr. *Lin*] is a plant having a slender, round, hollow stalk, about two feet high; its bark is full of filaments; like hemp, the leaves are long, narrow, and pointed; it bears a blue flower, to which succeeds a roundish fruit about the size of a pea, containing ten little seeds, full of an oily substance, or meal. There are 25 species, of which the most remarkable are—(1) the common annual flax; (2) the perennial Siberian flax, with umbillate clusters of large blue flowers; (3) the purging flax, a very small plant, not above four or five inches high, found wild upon chalk hills and in dry pleasure grounds. The first species is cultivated in the fields for manufacturing. The second sort is chiefly ornamental. The virtues of the third sort are expressed in its title. *Of the cultivation of flax*. A skilful flax raiser always prefers a free, open, deep loam; and all grounds that produced the preceding year a good crop of turnips, cabbages, potatoes, barley, or broad clover, or have been formerly laid down rich, and kept for some years in pasture. If the linseed is sown early, and the flax not allowed to stand for seed, a crop of turnips may be got after the flax that very year; the second year a crop of rye or barley may be taken, and the third year grass seeds are sometimes sown along with the linseed. Of preceding crops, potatoes and hemp are the best prepation for flax. If the ground is free and open, it should be but once ploughed, and that as shallow as possible, not deeper than 2½ inches. It should be laid flat, reduced to a fine garden mould by harrowing, and all stones and seeds should be carried off. Except a little pigeons' dung, no other should be used preparatory for flax, because it produces too many weeds, and throws up the flax thin and poor upon the stalk. Before sowing, the bulky clods should be broken or carried off the ground, and stones, weeds, and every other thing that may hinder the growth of the flax carefully taken away. The brighter in colour and heavier the seed is, so much the better; that which when bruised appears of a light or yellowish green, fresh in the heart, oily, and smells and tastes sweet, may be depended upon. Dutch seed of the preceding year's growth for the most part answers well, but it seldom succeeds if kept another year. Philadelphia seed produces fine lint and few bolls, because sown thick, and answers best in wet, cold soils. The quantity of linseed sown should be in proportion to the condition of the soil, for if the ground is in good heart, and the seed sown thick, the crop will be in danger of falling before it is ready for pulling. The time for sowing is from the middle of March to the end of April, as the ground and season answer best. The earlier the seed is sown, the less the crop interferes with the corn harvest. Late sown linseed may grow long, but the flax upon the stalk will be long and poor. Flax ought to be weeded when the crop is about four inches long: if longer deferred, the weeders could not avoid breaking or bending the stalks, and they would perhaps not recover their straightness again, and when the flax grows crooked, it is more liable to be hurt in the rippling and swingling. Quicken grass should be taken up, for, being strongly rooted, the weeding of it often loosens a great deal of the lint. If there is an appearance of a settled drought, it is better to defer the weeding than by that operation to expose the tender roots of the flax to the drought. When the crop grows so short and branchy as to appear more like seed than flax it ought not to be pulled before it is thoroughly ripe; but if it grows long and not branchy, the seed should be disregarded, and all the attention given to the flax. In the last case, it ought to be pulled after the bloom has fallen, when the stalk begins to turn yellow, and before the leaves fall and the bolls turn hard and sharp-pointed. When the stalk is small and carries few bolls, the flax is fine; but the stalk of coarse flax is gross, rank, branchy, and carries many bolls. When the flax has fallen and lies, such as lies ought to be immediately pulled, whether it has grown enough or not, as, otherwise, it will rot altogether. When parts of the same field grow unequally, so that some parts are ready for pulling before others, only what is ready should be pulled, and the rest should be suffered to stand till it ripens. The flax raiser ought to be at pains to pull and keep by itself each different kind of lint which he finds in his field: what is long and fine by itself, what is long and coarse by itself, and, in like manner, every other kind by itself that is of the same size and quality. If the flax is more valuable than the seed, it ought by no means to be stocked up, for its own natural juice assists it greatly in watering, whereas, if kept long unwatered, it loses that juice, and the harle adheres so much to the boon that it requires longer time to water, and even the quality of the flax becomes harsher and coarser; besides, the flax stacked up is in danger from vermin. The water in spring is not so soft and warm as in the harvest time, and nearly a year is lost of the use of the lint; but if the flax is so short and branchy as to appear most valuable for seed, it ought, after pulling, to be stacked and dried upon the field, as is done with corn, then stacked in winter, rippled in spring, and the seed should be well cleaned from bad seeds, &c. If the flax is to be regarded more than the seed, it should, after pulling, be allowed to lie some hours upon the ground to dry a little, and so gain some firmness, to prevent the skin or harle, which is the flax, from rubbing off in the rippling, an operation which ought by no means to be neglected, as the bolls, if put into water along with the flax, breed vermin there, and otherwise spoil the water. The bolls also prove very inconvenient in the grassing and breaking. The handfuls for ripplings should not be great, as this endangers the lint in the rippling-comb. After rippling, the flax raiser will perceive that he is able to assort each size and quality of the flax by itself more easily than he could before. In watering, a running stream wastes the lint, makes it white, and frequently carries it away; lochs, by the great quantity and motion of the water, also waste and whiten the flax, though not so much as running streams. But rivers and lochs water the flax quicker than canals. The greater way the river or brook has run, the softer, and therefore the better, will the water be. Springs or short runs from hills are too cold, unless the water is allowed to stand long in the canal. Water from coal or iron is very bad for flax. A little of the powder of galls thrown into a glass of water will discover if it comes from minerals of that kind, by turning it into a dark colour, more or less tinged in proportion to the quantity of metal it contains. When the water is brought to a proper heat, small plants will be rising quickly in it, numbers of small insects will be generating there, and bubbles of air rising on the surface. If no such signs appear, the water is scarcely warm enough, or is otherwise unfit for flax. Moss holes, when neither too deep nor too shallow, frequently answer well for watering flax when the water is proper, as before described. The proper season for watering flax is from the end of July to the end of August; doing this as soon as possible after pulling is very advantageous. The flax being sorted after rippling, as before mentioned, should next be put in nets, never larger than a man can grasp with both his hands, and tied very slack with a band of a few stalks. Dried rushes answer exceedingly well for binding flax, as they do not rot in the water, and may be dried and kept for use again. The beets should be put into the canal slopeways, half standing upon end, and the root end uppermost. Upon the cross ends, when uppermost, vermin frequently breed, destructive of the flax, which are effectually prevented by putting the crop end downmost. The whole flax in the canal ought to be carefully covered from the sun with divots; the grassy side of which should be next the flax to keep it clean. If it is not thus covered, the sun will discolour the flax, though quite covered with water. If the divots are not weighty enough to keep the flax entirely under water, a few stones might be laid above them, but the flax should not be pressed to the bottom. When the flax is sufficiently watered, it feels soft to the gripe, and the harle parts easily with the boon or straw, which last is then become brittle, and looks whitish. When these signs are found, the flax should be taken out of the water, beet after beet, each gently rinsed in the water to cleanse it of the filth which has gathered about it in the canal; and, as the lint is very tender, and the beet slackly tied, it must be carefully and gently handled. Great care ought to be taken that no part be overdone, and, as the coarsest waters soonest, if different kinds are mixed together, a part will be rotted when the rest is not sufficiently watered. If lint taken out of the canal is not found sufficiently watered, it may be laid in a heap for 12, 18, or 24 hours, which will have an effect like more watering; but this operation is nice, and may be dangerous if in unskilful hands. After the flax is taken out of the canal fresh lint should not be put a second time into it until the former water is run off, and the canal cleared and supplied with a fresh quantity of water. Short heath is the best field for grassing flax, as, when wet, it fastens to the heath, and is thereby prevented from being blown away by the wind; the heath also keeps it a little above the earth, and so exposes it more equally to the weather. When such heath is not to be got, links or clean old lea ground is the next best. Long grass grounds should be avoided, as the grass grows through the lint, frequently spots, tenders, or rots it; and grounds exposed to violent winds should also be avoided. The flax, when taken out of the water, must be spread very thin upon the ground, and being then also very tender, it must be gently handled; the thinner it is spread the better, as it is then more equally exposed to the weather; but it ought never to be spread during a heavy shower, as that would wash and waste the harle too much, which is then excessively tender, but soon after becomes firm enough to bear rain, which, with the open air and sunshine, cleans, softens, and purifies it to the degree wanted, and makes it blister from the boon. In short, after the flax has got a little firmness by being a few hours spread in dry weather, the more rain and sunshine it gets the better. If there is little danger of high winds carrying off the flax, it will be much the better for being turned about once a week; if it is not to be turned, it ought to be very thinly spread. The spreading of flax and hemp, which requires a great deal of ground, enriches it greatly. The flax raiser should spread his first row of flax at the end of the field opposite to the point whence the most violent wind usually comes, placing the root ends foremost; he makes the root ends of every other row overlap the crop ends of the former row three or four inches, and binds down the last row with a rope, by which means the wind does not so easily get below the lint to blow it away; and as the crop ends are seldom so fully watered as the root ends, the overlapping has an effect like giving the crop ends more water. A dry day ought to be chosen for taking up the flax, and if there is no appearance of high wind, it should be loosed from the heath or grass, and left loose for some hours to make it thoroughly dry. As a great quantity of flax can scarcely be all equally watered and grassed, and the different qualities will best appear on lifting the flax from the grass; therefore, at that time each different kind should be gathered together and kept by itself: that is, all of the same colour, length, and quality. The smaller the beets lint is made up in, the better for drying, and the more convenient for stacking, housing, &c.; and in making up these beets, as in every other operation upon flax, it is of great consequence that the lint be laid together as it grew, the root ends together and the crop ends together. "The quantity of flax imported into Great Britain has for a considerable number of years been gradually increasing. The increase has amounted to about 30,000 tons, the imports being now about 80,000 tons, and twenty years ago they were scarcely 50,000 tons. The proportion per cent. of this quantity imported from different countries may be judged from the following table:—

	Per cent.
Russia	69.0
Prussia	11.0
Holland	9.0
Belgium	6.5
France	3.5
Other countries	1.0
	100.0

During the last few years great efforts have been made to extend and improve the manufacture of this valuable fibre in various parts of the world. It must be remembered that, in addition to the above-mentioned quantity of flax imported, the manufacturers of England have consumed rather more than a quarter as much again cultivated in various parts of the British empire, but chiefly in Ireland. This proportion has also considerably increased during the last twenty years, the number of acres under flax cultivation in that country being now 175,495, each acre being worth £15. The value of flax depends in part on the climate and soil on which it is cultivated; and in part also on the care and skill with which the process is conducted. According to its quality, its value varies from £40 to £180 per ton.

FLAXSEED, or LINSEED [Fr. *Graine de lin*, *Lin*, Ital. *Linseme*, Span. *Linasa*, Port. *Linhaca*, Ger. *Leinsaat*, Du. *Lynzaad*, Da. *Horfrö*, Sw. *Linfrö*, Rus. *Semja lenjanoe*], is imported chiefly from Russia, Holland, America, and India, and is bought either for sowing or for the oil mills. The bright brown Dutch seed is the most profitable, as the growth, when sown, is rapid, and the crop is heavier than that of any other kind. The seeds of Russia and India go to the mills. Price, per qr., 60*s.* to 64*s.* for foreign linseed.

FLOTSAM, JETSAM, and LAGAN. Flotsam is when a ship is sunk or cast away, and the goods float on the sea. Jetsam is when a ship is in danger of being sunk, and to lighten the ship the goods are cast into the sea, and the ship, notwithstanding, perishes; and Lagan is when the goods so cast into the sea are so heavy that they sink to the bottom, and therefore the seamen fasten to them a buoy or cork, to enable them to find them again. The Sovereign shall have Flotsam, Jetsam, and Lagan, when the ship is lost and the owners of the goods are not known; when they may be known, they have a year and a day to claim Flotsam.

FOIL, among jewellers, a thin sheet of metal, placed under a precious stone, in order to increase its brilliancy or give it an agreeable and different colour. These foils are made of either copper, gold, or gold and silver together; the copper foils are usually known by the name of Nuremberg or German foils. They are prepared as follows:—Procure the thinnest copper plates you can get; beat these plates gently upon a well-polished anvil, with a polished hammer, as thin as possible, and, placing them between two iron plates as thin as writing-paper, heat them in the fire; then boil the foils in a pipkin, with equal quantities of tartar and salt, constantly stirring them till by boiling they become white; after which, taking them out and drying them, give them another hammering, till they are made fit for your purpose; afterwards polish them with a polishing-stone till they are bright as a looking-glass.

Foot, is a long measure, consisting of 12 inches the foot long, or divided into 12 inches, and the inch into barley-corns. Thus, the English standard foot is=12 lineal English inches=36 barley-corns=16 digits, 24 palms=3 hands=5⅓ nails 1⅓ spans.

Forgery, in Law [from the French *accudere, fabricare*], may be defined at common law the fraudulent making or alteration of a writing, to the prejudice of another man's right; "or it is the crime of imitating the subscription of another, adhibiting it to a deed, and putting that deed to use by acting under it, receiving property in virtue of it, founding on it as a title to sue or to defend, or transferring it to another. In considering forgery, it is necessary to attend first to the mode of the proof by which the crime is established, and secondly to the punishment which is inflicted on the perpetrator thereof. The proof of forgery is either direct or indirect. The direct proof consists in the examination of the writer of the deed, and of the witnesses who sign the deed and attest the subscription. The indirect mode of proof consists in an investigation of all the circumstances from which it may be inferred that the person by whom a deed is said to have been executed, actually did not subscribe. The comparison of the hand-writing is made with genuine subscriptions of the same date as that alleged to have been forged, and where the real subscriptions differ materially from the one founded on, the forgery of the latter may be pronounced on with a considerable degree of certainty. It is an established rule, however, that the proof of forgery by a mere comparison of hand-writing is not admissible." Forgery is an offence which was punished by the civil law with deportation or banishment, and sometimes with death, in cases of gross forgery; but an Act was passed—11 George IV. and 1 William IV.—"abolishing the punishment of death in certain cases of forgery," but "enjoins and authorizes the punishment of being transported beyond the seas for the term of the offender's life, the offender having forged or altered any writing, instrument, matter, or thing whatsoever, knowing the same to be forged or altered, or of falsely personating another."

Foul, in the sea language, is used when a ship has been long untrimmed, so that grass, weeds, periwinkles, barnacles, or the like, stick or grow to her sides under water. In this state she is said to be foul. A ship is said to make foul water when, being under sail, she comes into such shoal or low water that, though her keel does not touch the ground, yet she comes so near it that the motion of the water under her raises the mud from the bottom, and so fouls the water. Foul is also a sea term importing the running of one ship against another. This happens sometimes by the violence of the elements, or the denseness of a fog, or through the carelessness of the people on board. The damages occasioned by running foul are of the nature of those in which both parties must bear a part. They are usually made half to fall upon the sufferer, unless in cases where it is evidently the fault of the master of the vessel, when he or his owners alone bear the damage. *Foul* ground of a road, bay, sea-coast, or harbour, signifies that which is rocky, or abounding with shallows, or otherwise dangerous. *Foul Hawse* denotes that the cables are turned round each other, by the winding or turning about of a ship while she rides at anchor. *Foul* wind expresses that which is unfavourable or contrary to the course of the ship.

Fox-skins. There is perhaps no animal whose fur is subject to greater variety than the fox. The skin of this quadruped in the South of Europe is generally red, but in some parts of America, Asia, and the North of Europe there are black, white, grey, variegated, and fawn-coloured foxes. The skins of these parts of the world are greatly superior to ours, especially the black and white, which are uncommonly fine, and sell at a very high price. The Turks and Russians are the chief traders in fox-skins in the North of Europe. We import some of the articles from Asia, but more from North America.

Frail, a basket made of rushes, &c., in which figs, raisins, and the like are packed up. It usually contains 75 lb. weight.

Frame-work Knitting is a frame made of steel or polished iron, used in manufacturing stockings. This invention has been variously attributed by some to Wm. Lee, of St. John's College, Cambridge, at so early a period as 1589, whilst by others it has been fixed at a much later period, and the credit of the invention has been assigned to a student at Oxford, who, having improvidently married a poor young woman, and being reduced to extreme distress, they entirely supported themselves by knitting stockings, at which the woman was very expert; the student invented a kind of loom or frame work, which has been of excellent service to this country.

France, one of the "Great Powers" of Europe, a maritime republic on the western skirts of the continent, is bounded on the west by the English Channel, the Atlantic, and the Bay of Biscay, on the south by the Pyrenees and the Mediterranean, on the east by Italy, Switzerland, and Germany, and on the north by Belgium. *Lat.* 42° 20′ to 50° 5′ N., and *Long.* 4° 50′ W. to 7° 40′ E. The Strait of Dover, with a breadth of about 21 miles, separates it from England. *Area*, 204,060 square miles, or 130,630,469 acres. *Pop.* in 1866, 36,504,845. (*Almanach de Gotha* for 1873.) The *pop.* for 1873 is estimated at 36 millions. Down to the close of the 18th century, France was still able to boast an unbroken dynasty of successive sovereigns. The "French Revolution" of 1789 introduced a new order of things. Since that date the periods of France's greatest glory were under the Emperors Napoleon I. and III. The disastrous result of the Franco-German war of 1870–1 brought the brilliant career of the latter to a close. The ex-Emperor retired to England an exile, and died there in 1873. A republic had been proclaimed in France on the 4th September, 1872, with M. Thiers as president. The war resulted in crushing defeat and humiliation for France, and the conditions she was compelled to accept were the cessation to Germany of the Rhine provinces, Alsace and Lorraine, and the payment in money of 200 millions sterling. M. Thiers was superseded in the presidency of the republic by Marshal MacMahon, 24th May, 1873. France is divided for governmental purposes into 87 departments, exclusively of the three departments of Oran, Algiers, and Constantine in Algeria. The departments—as the Seine, Loire, Garonne, &c. —are for the most part named after the chief rivers that flow within their limits, and the knowledge of the situation of the different departments is most readily acquired by mastering the courses of the chief rivers. The territory ceded to Germany in 1871 had an area of 5,601 square miles, or 3,584,926 acres, with a population of 1,597,219 The circumference of France is about 3,000 miles, and of the entire circumference about 1,200 miles consist of coast line. France has the command of three seas, the North Sea, the Atlantic, and the Mediterranean. Its north-west coast is of great commercial importance, from the circumstances that it is washed by the English Channel, that it embraces the two peninsulas of Brittany and Cotentin—projections which, by forming bays, afford facilities for the construction of ports—and that it numbers among its harbours the famous seaports of Morlaix, Cherbourg, Havre, Boulogne, Calais, and Dunkirk. (The chief ports of France are described below.) The principal mountains of France run in a continuous chain from the north-east frontier of the country south-west to the Pyrenees. From the middle of this mountain system a separate range extends away north-west across the country, and ends in the bold coasts of the lofty peninsula of Brittany. The trend of the mountains determines the courses of the rivers; confines the "rapid Rhone" to the south-east angle of the country, shoulders off the Rhine in the north, each to seek its fame in German Fatherland, and sends the great rivers of the country—great as far as commercial importance is concerned—the Garonne, the Loire, and the Seine, flowing north-westward into the Atlantic, and giving rise to such great commercial centres as Bordeaux, Nantes, and Havre. In France the soil is more than usually fertile; and of the entire area of the country, the productive portion bears a larger proportion to the whole than in most European lands. Of the 130 millions of acres, 90 millions are cultivated, and about 70 millions are under crops, chiefly grain; 5 millions are laid out in vineyards, and 5 millions more in orchards and gardens. Forests, water, the sites of towns, and uncultivated heath, occupy about 25 millions of acres. The principal agricultural products are wheat, barley, rye, maize, oats, potatoes, beet-root, hops, &c.; the forests abound in oak, birch, pine, beech, elm, and chestnut trees; and among the fruit trees are the olive, the chestnut, walnut, almond, apple, pear, citron, fig, plum. As a wine-producing country, France bears the highest reputation. The vine is cultivated, more or less, throughout the whole kingdom. The number of vine-growers is estimated at 1,800,000 persons, and the quantity produced at 800,000,000 imperial gallons, worth £16,760,000, or about 5*d.* per gallon. After wheat, wine is incomparably the most important product of France. The clarets of the Gironde; the champagne, so called from the name of the province in which it is grown; the "perfect" Burgundy, produced in the province—the former dukedom—of the same name, and stated by connoisseurs to be the finest of French wines, are among the best known varieties. The quantity of champagne exported annually amounts to 13,500,000 bottles, of which about 3,000,000 bottles are consumed in other parts of France, and the remainder bought chiefly by England and her colonies. Of the wines of Burgundy, 75,000,000 gallons are annually produced. The country is rich in mineral wealth, the most abundant metal being iron. The departments in which this valuable metal is most widely distributed are Haute Marne, Haute Saône, Méori, Cote d'Or, Dordogne, Orne, Meuse, Isère, Chor, Ande, Pyrénées Orientales, Ariège, and Haute Vienne. Gold and silver, copper, mercury, zinc, &c., are also found. Coal is widely diffused, the principal "field" being in the Department du Nord. Mining industry is actively carried on, chiefly under the control of government; and the principal mineral products are coal, iron, salt, alum, copper, lead, and manganese. The French Council-General of Mines consists of the Minister of Public Works and the six Inspectors-General, who supervise mining operations in the six departments into which the country is divided. The School of Mines in Paris is a famous scientific institution, and the Free Practical Miners' School, at St. Etienne, is a useful establishment, in which instruction is given gratuitously. The climate of France is said not to be excelled by that of any other country in Europe. The air is pure, the winters usually mild, and the sky proverbially bright. The manufactures of France are most numerous and extensive; indeed, as a manufacturing country, the "land of the Gaul" takes rank next after Great Britain. Great works for the manufacture of arms are at

Tulle, St. Etienne, and Keingenthal. The manufacture of artistic bronzes has its head-quarters in Paris. In the capital, also, are the head-quarters of the ornamental jewellery trade, and here reside no less than 50,000 hands engaged in watchmaking. The silk manufactured goods of France have long been famous for excellence of quality and beauty of colour and design. The weavers of Lyons are no longer so prosperous as they were formerly, though in other localities the industry has in no sense declined. Not a third part of the silk formerly produced in France is now grown there; by far the greater part of the raw and thrown silk which we import from France being the product not of that country, but of Italy. In 1860, the quantity of silk produced in the country was 26,000,000 kilogrammes, value 117,000,000 francs; while the amount produced in 1864 was only 7,500,000 kilos., value 57,000,000 francs. Woollen and linen manufactures are most important. 12,000,000 lb. of wool were imported in 1866. France also imports coal, coke, and iron ore in large quantities. But it is in the commerce of France in which Englishmen are chiefly interested. The commerce of France with England, measured by the value of the exports and imports, is represented by no less a figure than £60,000,000 sterling. In 1868, the exports from France to Great Britain consisted chiefly of haberdashery, silk, woollen, silk and cotton goods, clothing, jewellery, raw silk, wine, metal goods, fruit, spirits, &c., value 117 millions sterling. In the same year, Britain exported to France raw cotton, silk, raw wool, timber, coal, coffee, grain, cattle, &c., to the value of 132 millions sterling. In 1871, while France was still prostrated by the conflict with Prussia, the exports to the United Kingdom amounted in value to £30,357,858, and the imports from Britain to France amounted to £33,565,019. In many of its provisions, the original commercial treaty between England and France remains still in force. A number of modifications had been introduced with the mutual consent of both nations during the presidency of M. Thiers, and the year 1877 is looked forward to in France as the period when arrangements will be made to return to the spirit, if not to the actual terms of the treaty drawn up between Richard Cobden and M. Chevalier in 1860. In 1871, the income of France was £96,258,467; the expenditure, £95,532,517, and the public debt (in Nov. 1872), £960,000,000. But even with such an enormous public debt, abnormally great owing to the late war, the resources of the country are so great, and its powers so vigorous and elastic, that early in 1872 £80,000,000 of the Prussian indemnity had been paid off. The payment was completed in 1873, when the complete evacuation of French territory by German troops took place. The present military force of France is about 914,000, and the "effective strength" of the army alone consists of 450,000 men "under colours." In the latter part of the year 1872, the French navy consisted of 445 vessels, of which 286 were steamers, and 44 sailing vessels. Of the steamers 52 were iron clads, carrying 1,163 guns; 238 large war steamers, carrying 1,162 guns; 38 corvettes, transports, &c., carrying 107 guns. The personnel of the navy consists of 28,000 men, together with about 20,000 marine, and marine artillery troops. Provision is being made to largely extend both the land and naval forces on the occurrence of any emergency. Among the principal harbours and commercial ports of France are—*Cherbourg*, in the department of *Manche*, at the mouth of the Divette, the chief naval station and fortress of the country, defended by an immense fortified breakwater, or *digue*, the construction of which cost £2,000,000, and the dimensions of which are over twice those of Plymouth breakwater. *Pop.* 42,000. *Havre*, at the mouth of the Seine on the English Channel, department of *Seine Injerieure*, with accommodation in its harbour for 2,000 vessels, and with huge docks, one of which covers 50 acres. There is an Exchange, Chamber of Commerce, and Merchants' Club; fruit, fish, flower, and meat markets. Trade and commerce extensive and increasing. *Pop.*, 74,900. *Nantes*, department of *Loire Inferieure*, one of the largest and richest commercial cities of France, on the lower course of the Loire. Its fine quays cannot be reached by vessels over 100 tons. It is the great port for the export of brandy. *Pop.* 111,970. *Bordeaux*, department of *Gironde*, 75 miles from the mouth of the Garonne, a most prosperous commercial port. Average export of brandy, 1,598,211 gallons; also very extensive exports of fruit and wines. *Pop.*, 173,300. *Marseilles*, on the south-east coast of France, on the shores of the Mediterranean, department *Bouches du Rhone*. *Pop.* 300,131. It is the principal port on the Mediterranean, and the steam packet station for Italy, Spain, and the East. Its ports, natural and artificial, are commodious and safe in the highest degree. Its trade is with the world. It is now connected by the large steam-ships of the *Messageries Imperiales* with India, China, Japan, &c., the service of steamers being monthly. Nearly 20,000 vessels, of about 3,500,000 tons, enter and clear the port annually.

FRANKINCENSE [Ger. *Weihrauch*, Du. *Wierook*, Da. *Virog virak*, Sw. *Veisauch virack*, Fr. *Encens*, *Encens fin ou mâlé*, *Oliban*, It. *Incenso olibano*, Sp. *Insenso macho olibano*, Port. *Incenso*, *Incenso macho olibano*, Rus. *Ladon prostoi*, Pol. *Kadzidlo*], or olibanum. It is well known that a resinous juice exudes from the common Scotch fir, which hardens into tears. The same, or similar exudations, appear in the spruce fir. These tears constitute the substance called *thus*, or common frankincense. It is a solid, brittle resin, brought to us in little balls, or masses of a brownish or yellowish colour on the outside, internally whitish or variegated with whitish specks; of a bitterish, acrid, disagreeable taste, without any great smell. The pine tree, which yields common turpentine, is supposed to produce frankincense, which is said to concrete on the surface of the terebinthinate juice soon after it has issued from the plant. Frankincense is principally imported from India and the Levant.

Freight, in navigation and commerce, is the consideration of money agreed to be paid for the use or hire of a ship, or, in a larger sense, the burthen of such ship. The freight is most frequently determined for the whole voyage without respect to time. Sometimes it depends on time. In the former case, it is either fixed at a certain sum for the whole cargo, or so much per ton measurement of 40 feet. If a certain sum is agreed on for the freight of the ship, it must be all paid, although the ship, when measured, should prove less, unless the burthen is warranted. When a whole ship is freighted, if the master ships any goods besides those of the freight, he is liable for damages. If the voyage is completed according to the agreement, without any accident, the master has a right to demand the freight before the delivery of the goods; but if such delivery is prevented by negligence or accident, the parties will be respectively responsible as follows;—If the merchant should not load the ship within the time agreed upon, the master may engage with another, and recover damages. If the merchant recalls her after she has completed her cargo and sailed, he must pay the whole freight; but if he unloads before the ship has actually sailed, he will, in such case, only be responsible for damages. If the merchant loads goods which it is unlawful to export, and the ship is prevented from proceeding on that account, he must nevertheless pay the freight. If the master is not ready to proceed on the voyage at the time stipulated, the merchant may load the whole or part of the cargo on board another ship, and recover damages. If an embargo is laid on the ship before she sails, the charter-party is dissolved, and the merchant pays the expenses of loading and unloading; but if the embargo is only for a short limited time, the voyage shall be performed when it expires, and neither party is liable for damages. If the master sails to any other port than that agreed on, without necessity, he must sail to the port agreed on at his own expense, and is also liable for any damages in consequence of it. If the master transfers the goods from his own ship to another, without necessity, and they perish, he is responsible for the full value and all charges; but if his own ship is in immediate danger, the goods may be put on board another ship at the risk of the owner. If a ship is freighted out and home, and a sum agreed for the whole voyage, nothing becomes due until the return of the ship. If a certain sum is specified for the homeward voyage, it is due, although the correspondent abroad should have no goods to send home. A ship was freighted to a certain part and home, a particular freight agreed upon the homeward voyage, with an option reserved for the correspondent to decline it, unless the ship arrived before a certain time. The master did not go to the port agreed on, and therefore became liable to damages; the obligation being absolute on his part, and conditional only on the part of the freighter. If the goods are damaged without fault of the ship or master, the owner is not obliged to receive them and pay the freight; but he must either receive or abandon the whole; he cannot receive those that are not damaged and reject the others. If the goods are damaged through the insufficiency of the ship, the master is liable for the same; but if it is owing to stress of weather, he is not accountable.

French Berries. The berries of the Rhamus infectorius are used to give a yellow dye to silk, but it is very fugitive, especially in the sun. The berries are gathered unripe, bruised, steeped, and then boiled in water mixed with the ashes of vine-stalks to give a body, and then passed through fine linen.

Funds, *public*. When the practice was first adopted of borrowing money of individuals for defraying the extraordinary expenses of the State, the produce of some particular impost was generally appropriated as the fund out of which the principal and interest of the debt was to be discharged. The possession of the acknowledgment given to Government for the money advanced established a right to receive the payments from the fund originally agreed upon. The sale of these securities was considered as a sale of the claim upon the fund, and as the acknowledgments given were of different kinds, the general application of the provision on which they rested was found more convenient for purposes of business; thus the sale or purchase of the Government securities was commonly called the sale or purchase of the public funds, till at length the expression so far varied from its original signification that, instead of meaning the revenues out of which public debts, or the interest of them, is payable, it denominates the capital of such debts, in which sense it is generally used. Variations in the saleable value of the public funds at first were caused chiefly by political events, which were supposed to affect either the authority of those by whom the debts were contracted or the means of paying them; but since their great increase has induced many persons to make buying and selling shares therein a regular trade, the fluctuations of the price in general depends principally on the proportion of buyers to sellers, and on the schemes and combinations in which they engage in support of their respective speculations. The chief part of the public funds consists of perpetual annuities, or those debts on which a stipulated rate of interest is to be continued to be paid unless the principal should be redeemed; and other parts consist of annuities for a certain number of years, and life annuities. The perpetual annuities are distinguished by different titles, according to the rate of interest they pay, or the time and purpose of their creation; and when Government, by a new loan, contracts an additional debt bearing a certain fixed interest, it is usual to add the capital thus created to the amount of that part of the public debt which bears the same interest and denomination, and to add the produce of the taxes imposed for payment of such new debt to the fund provided for paying the interest of the former capital, thus consolidating the old and new debts, and making the interest payable out of the general produce of the same fund; hence we have 3 per Cent. Consolidated Annuities, which take their title from having originally consisted of sums which had been borrowed at higher rates of interest, and reduced at different periods to 3 per cent. The chief causes which naturally contribute to lower the price of the funds may be divided into two classes, viz., those which happen in time of war, and those which occur in times of peace. With respect to the first, it has always been noticed that in proportion as the demands of Government increase, the interest of money will rise; and individuals, from a prospect of employing their money more advantageously in new loans, will sell out of the old funds, especially those which bear the lowest interest. This will happen as early as possible, because the advantage will be the greater; therefore speculators will crowd to market as soon as they have heard intelligence of a rupture with any considerable Power, that they may sell before the fall increases. The difficulty will be to distinguish between rumours of war and the actual approach of this national calamity. There can be no surer guide than an impartial scrutiny into the political situation of our country, the state of its commerce and revenues, the character of the ministers at the head of affairs, compared with the same circumstances in the nation with which a war is expected, which will in some degree determine what kind of credit we ought to give to reports of an unavoidable rupture. Should the events of war prove unfavourable, and we lose valuable settlements abroad, the funds will fall from a concurrence of sellers, many of them merchants, who depend on remittances from the conquered places, and for want of them are obliged to part with their funded property. The apprehensions of those misfortunes will likewise place others in a similar situation. Powerful alliances formed against the interest of the kingdom, having a tendency to affect its political existence as an independent state, will affect the funds; for the public defence must require unusual supplies, while increasing the value of money by the great demand for it will lower the price of the old funds. An actual invasion of a foreign enemy is most to be dreaded: for the universal panic that such an event would occasion no adequate remedy can be prescribed. It is difficult, if not impossible, to say how the value of the funds in this case might sink in a few days, owing to the vast concourse of sellers assembled in the city and elsewhere; and probably nothing would prevent a cessation of business for the want of purchasers but the patience, fortitude, and discernment of a few opulent individuals, who would take this opportunity to buy, actuated chiefly by the hopes of great gain, and, in some measure, by reflections on the uncertain issues of war. The storm may subside, and public tranquillity being restored, the funds may recover their former value. The principal circumstances which ought to have any considerable influence on the funds in time of peace:—Orders from foreigners to vest considerable sums in the funds at any stated times. A steady, judicious administration of the revenues of the kingdom; a general good understanding between every branch of Government and the people, with the prospect of the duration of peace and of such a ministry, so that the value of money may fall daily. These are the chief events that may make the funds rise considerably from the concourse of purchasers, who will find no other channels open for employing their money to equal advantage. The funds are equally liable to sink considerably beneath the market price should there be mutual distrust between the administration and the public at large, causing mutual complaints and reproaches, and engendering parties and divisions which tend to tumults, insurrections, and civil war. A stagnation and considerable failure of private credit; earthquakes, inundations, or fires destroying any part of our commercial settlements, by which our merchants are obliged to part with their property in the funds to enable them to discharge their engagements. To those who wish to invest, the publishers of this work also publish Mr. Beeton's "Guide to the Investment Market," price one shilling. *Powers* of attorney are to be had at the offices where the stocks lie. These are for receiving dividends, some for buying, and others for selling; and general ones are for buying and selling and receiving dividends. Persons having occasion to invest money in the public funds generally employ a broker, whose business is to buy and sell on commission these funds. Many people, however, like to know what part of a hundred thirty or forty pounds will buy before they go to a broker, and who are unable to reckon the amount up themselves. If, for instance, you wish to know the value of any quantity of stock that is greater than the current price of one hundred, multiply that quantity by the price of one hundred, cut off the last two figures to the right, and the other figures will be pounds; multiply the two last figures by 20, cut off the two last figures of that product, and the remaining figures, if more than one, will be shillings; multiply by 12 and by 4, and proceed in the same manner for pence and farthings. Thus: what must I give for £137 stock in the 3 per Cent. Annuities when the current price of £100 is £73?

```
        £137
          73
        ----
         411
        959
      ------
    £100[01 struck off
          20
      ------
    s. 0[120
          12
      ------
    d. 2[40 Ans. £100 0 2¼
           4
       -----
    f. 1[60
```

If you want to know the value of any quantity of stock which is less than the price per cent, you must multiply the greater sum by the smaller and proceed as before. What, for instance, must I receive for £45 stock Three per Cent. Annuities when the market price is £73?

```
          73
          45
        ----
         365
        292
      ------
    £32[85 Ans. £32 17
         20
      ------
    s. 17[00
```

It frequently happens that there is a fraction added to the price, as 1-8th, 1-4th, 3-8ths, 1-half, 5-8ths, 3-4ths, 7-8ths. In this case, when the quantity is greater than the price per cent, take the fractional part of the large sum and add it to the product of your multiplication. Supposing the stock be £148, and the price 73⅜ you multiply 148 by 73, to the product of that you add 3-8ths of 148, which is found by multiplying 148 by 3 and dividing it by 8 to produce £55 10s. Example:—

```
      148           148
        3            73'3-8ths.
     ----         -----
    8)444           444
     ----         1036
    55'10         -----
                  108[04
                   55'10
               --------
              £108[59'10
                      20 Ans. £108 11 10¾
                  ------
                s. 11[90
                      12
                  ------
                d. 10[80
                       4
                   -----
                 f. 3'20
```

Even when the sum is less than the price per cent., if it consists of two figures, proceed in the same manner, but if it consists of one figure only, then the shortest way is to multiply the price per cent. and take in the fraction. Supposing I had to buy £8 at 73'7-8ths per cent., I find that 7-8ths are 17s. 6d. I proceed thus:—

```
       73 17 6
             8
    ----------
    £5[91 0  0
            20
    - ------   Ans. £5 18 2¼
    s. 18[20
          12
       -----
    d. 2[40
          4
       ----
    f. 1[60
```

Fur [Ger. *Pelzwerk*, *Rauchwaaren*, Du. *Bontbouwerk*, Da. *Foerkwerk*, Fr. *Fourrure*, It. *Pellicce*, Sp *Peleteria*], the skins of quadrupeds, which are dressed with alum without depriving them of their hair. The skins chiefly used are those of the sable, ermine, bear, beaver, hare, &c. Furs are imported principally from North America and from Russia, and are of great value, particularly the skins of ermine, black foxes, and sables. The commerce which is carried on between Europe and North America, in the article of fur alone, is very great. The fur trade, from the earliest settlement of Canada, was considered of first importance to that colony. The country was then so populous that in the vicinity of the establishments the animals whose skins were precious soon became scarce. The Indians, therefore, to procure the necessary supply, were encouraged to penetrate into the country, and were generally accompanied by some of the Canadians, who found means to induce the remotest tribes of natives to bring the skins which were most in demand to their settlements in the way of trade. Gradually this trade was advanced, and spread as far west as the banks of the Saskatchewan river in 53° N. lat., and 102° W. lon. This was brought about by the Canadians who travelled with the Indians, who became a kind of pedlars, who were found extremely useful by the merchants engaged in the fur trade. Three or four of these people would join their stock, put their property into a birch-bark canoe, which they worked by themselves, and went direct to the country where they knew they were to hunt. At length these voyages extended for twelve or fifteen months, when they returned with rich cargoes of fur, and followed by great numbers of the natives. The French had at this time the trade to themselves, as the Hudson's Bay Company made no exertions to obtain even a share of it. In the winter of 1763-4 the North-West Company was established. This was no more than an association of commercial men, agreeing among themselves to carry on the fur trade unconnected with any other business, though many of the parties engaged had extensive concerns altogether foreign to it. It may be said to have been supported entirely upon credit; for, whether the capital belonged to the proprietor, or was borrowed, it equally bore interest, for which the association was annually accountable. It consisted of twenty shares, equally divided among the persons concerned. Of these, a certain proportion was held by the people who managed the business in Canada, and were styled agents for the Company. Their duty was to import the necessary goods from England, store them at their own expense at Montreal, get them made up into the articles suited to the trade, pack and forward them, and supply the cash that might be wanting for the outfits; for which they received, independent of the profit on their shares, a commission on the amount of the accounts, which they were obliged to make out annually, and keep the adventure of each year distinct. Two of them went annually to the Grande Portage, to manage and transact the business there, and on the communication at Detroit, Michilimakinac, St. Mary's, and Montreal, where they received stores, packed up, and shipped the Company's furs for England, on which they had also a small commission. The remaining shares were held by the proprietors, who were obliged to winter and manage the business of the concern with the Indians, and their respective clerks, &c. The articles necessary for this trade were coarse woollen cloths of different kinds; milled blankets of different sizes; arms and ammunition; twist and carrot tobacco; Manchester goods; linens and coarse sheetings; thread, lines, and twine; common hardware; cutlery and ironmongery of several descriptions; kettles of brass and copper, and sheet-iron; silk and cotton handkerchiefs; hats, shoes, and hose; calicoes and printed cottons, &c., &c., &c. These, and the expense of transport to and from the Indian country, including wages to clerks, interpreters, guides, and canoe-men, with the expense of making up the goods for the market, formed about half the annual amount against the adventure. The produce of the year 1798 consisted of the following furs and peltries:—106,000 beaver skins, 2,100 bear skins, 1,500 fox skins, 4,000 kitt fox skins, 4,600 otter skins, 17,000 musquash skins, 32,000 marten skins, 500 buffalo robes, and a quantity of castorum, 1,800 mink skins, 6,000 lynx skins, 600 wolverine skins, 1,650 fisher skins, 100 rackoon skins, 3,800 wolf skins, 700 elk skins, 750 deer skins, 1,200 deer skins, dressed. Of these were diverted from the British market, being sent through the United States to China, 13,364 skins, fine beaver, weighing 19,283 pounds, 1,250 fine otters, and 1,724 kitt foxes. The total number of men employed in the concern was 50 clerks, 71 interpreters and clerks, 1,120 canoe men, and 35 guides. Of these, 5 clerks, 18 guides, and 350 canoe-men were employed for the summer season in going from Montreal to the Grande Portage, in canoes, part of whom proceeded from thence to Rainy Lake, and were called pork-eaters, or goers and comers. These were hired in Canada or Montreal, and were absent from the 1st of May till the latter end of September. For this trip the guides had from 800 to 1,000 livres, and a suitable equipment; the foreman and steersman from 400 to 600 livres; the middlemen from 250 to 350 livres, with an equipment of one blanket, one shirt, and one pair of trowsers; and were maintained during that period at the expense of their employers. Independent of their wages, they were allowed to traffic, and many of them earned a sum equal to the amount of their wages. About one-third of these went to winter, and had more than double the above wages and equipment. All the others were hired by the year, and sometimes for three years; and of the clerks many were apprentices, who were generally engaged for five or seven years, for which they had only £100, provision, and clothing. Such of them who could not be provided for as partners, at the expiration of this time, were allowed from £100 to £300 per annum, with all necessaries, till provision was made for them. Those who acted in the two-fold capacity of clerk and interpreter, or were so denominated, had no other expectation than the payment of wages to the amount of from 1,000 to 4,000 livres per annum, with clothing and provisions. The guides, who were a very useful set of men, acted also in the additional capacity of interpreters, and had a stated quantity of goods, considered as sufficient for their wants, their wages being from 1,000 to 3,000 livres. The canoe-men were of three descriptions: foremen, steersmen, and middlemen. When on a trading expedition, one of the points that is made for is the island of Michilimakinac, at the confluence of the Lakes Huron and Michigan, in lat. 45° 54′ N. To keep the direct course to Lake Superior, the north shore from the River Tessalon should be followed, crossing to the north, to end of St. Joseph, and passing between it and the adjacent islands, which makes a distance of 50 miles to the fall of St. Mary, at the foot of which, on the south shore, there is a village, formerly a place of great resort for the inhabitants of Lake Superior, and consequently of considerable trade. It has, however, dwindled to nothing, and is reduced to about thirty families of the Algonquin nation, and ten or twelve Canadians, who have been in the Indian country from an early period of life, and intermarried with the natives, who have brought them families. Their inducement to settle there was the great quantity of white fish that are to be taken in and about the falls with very little trouble, particularly in the autumn, when the fish leave the lakes, and come to the running and shallow waters to spawn. These, when salt could be procured, were pickled just as the frost set in, and proved very good food with potatoes, which have of late been cultivated with success. The natives live chiefly on this fish, which they hang up by the tails, and preserve throughout the winter, or at least as long as they last; for whatever quantity they may have taken, it is never known that their economy is such as to make them last through the winter, which renders their situation very distressing; for if they had activity sufficient to pursue the labours of the chase, the woods have become so barren of game as to afford them no great prospect of relief. In the spring of the year they and the other inhabitants make a quantity of sugar from the maple-tree, which they exchange with the traders for necessary articles, or carry it to Michilimakinac, where they expect a better price. One of these traders was agent for the North-West Company, receiving, storing, and forwarding such articles as come by the way of the lakes upon their vessels; for it is to be observed that a quantity of their goods are sent by that route from Montreal in boats to Kingston, at the entrance of Lake Ontario, and from thence in vessels to Niagara, then overland ten miles to a water communication by boats to Lake Erie, where they are again received into vessels, and carried over that lake up the River Detroit, through the Lake and River Sinclair to Lake Huron, and thence to the Falls of St. Mary's, when they are again landed and carried for a mile above the falls, and shipped over Lake Superior to the Grande Portage. This is found to be a less expensive method than by canoes, but attended with more risk, and requiring more time than one short season of this country will admit; for the goods are always sent from Montreal the preceding fall; and besides, the Company get the whole of their provisions from Detroit, as flour and Indian corn; as also considerable supplies from Michilimakinac, of maple sugar, tallow, gum, &c., &c. For the purpose of conveying all these things, there are vessels upon the Lakes Erie and Huron, and one on Lake Superior, of from 50 to 70 tons burthen. This being, therefore, the depot for transports, the Montreal canoes, on their arrival, were forwarded over Lake Superior, with only five men in each; the others were sent to Michilimakinac for additional canoes, which were required to prosecute the trade, and then take a lading there, or at St. Mary's, and follow the others. At length they all arrive at the Grande Portage, which is 160 leagues from St. Mary's, and situated on a pleasant bay, on the north side of the lake, in lat. 48° N. and lon. 90° W. from Greenwich, where the compass has not above five degrees east variation. At the entrance of the bay is an island which screens the harbour from every wind except the south. The shallowness of the water, however, renders it necessary for the vessel to anchor nearly a mile from the shore, where there is not more than fourteen feet water. This lake justifies the name that has been given to it; the Falls of St. Mary, which is its northern extremity, being in lat. 46° 31′ N. and in lon. 84° W., where there is no variation of the compass whatever, while its southern extremity, at the River St. Louis, is in lat. 46° 45′ N. and lon. 92° 10′ W.: its greatest breadth is 120 miles, and its circumference, including its various bays, is not less than 1,200 miles. Along its north shore is the safest navigation, as it is a continued mountainous embankment of rock, from 300 to 1,500 feet in height. There are numerous coves and sandy bays to land, which are frequently sheltered by islands from the swell of the lake. This is particularly the case at the distance of 100 miles to the eastward of the Grande Portage, and is called the Pays Plat. This seems to have been caused by some convulsion of nature, for many of the islands display a composition of lava, intermixed with round stones of the size of a pigeon's egg. The surrounding rock is generally hard, and of a dark blue grey, though it frequently has the appearance of iron and copper. The south side of the lake, from Point Shagoimigo east, is almost a continuous straight line of sandy beach, interspersed with rocky precipices of lime-stones, sometimes rising to 100 feet in height, without a bay. The embankments from that point westward are, in general, of strong clay, mixed with stones, which renders the navigation irksome and dangerous. On the same side, at the River Tonnagan, is found a quantity of virgin copper. The Americans, soon after they got possession of that country, sent an engineer thither. Lake Superior is the largest and most magnificent body of fresh water in the world It is clear and pellucid, of great depth, and abounding in a great variety of fish, which are the most excellent of their kind. There are trouts of three kinds, weighing from five to fifty pounds, sturgeon, pickerel, pike, red and white carp, black bass, herrings, &c., &c., and the last and best of all, the ticamang, or white fish, which weighs from four to sixteen pounds, and is of a superior quality in these waters. This lake may be denominated the grand reservoir of the River St. Lawrence, as no considerable rivers discharge themselves into it. The principal ones are the St. Louis, the Nipigon, the Pic, and the Michipicoten. Indeed, the extent of country from which any of them take their course, in any direction, cannot admit of it, in consequence of the ridge of land that separates them from the rivers that empty themselves into Hudson's Bay, the Gulf of Mexico, and the waters that fall into Lake Michigan, which afterwards become a part of the River St. Lawrence. This vast collection of water is often covered with fog, particularly when the wind is from the east, which, driving against the high barren rocks on the north and west shore, dissolves in torrents of rain. It is very generally said that the storms on this lake are denoted by a swell on the preceding day; but this circumstance does not appear from observation to be a regular phenomenon, as the swells more frequently subside without any subsequent wind. Along the surrounding rocks of this immense lake evident marks appear of the decrease of its water by the lines observable along them. The space, however, between the highest and the lowest is not so great as in the smaller lakes, as it does not amount to more than six feet, the former being very faint. The inhabitants that are found along the coast of this water are all of the Algonquin nation, the whole of which do not exceed 150 families. These people live chiefly on fish; indeed, from what has been said of the country, it cannot be expected to abound in beasts, as it is totally destitute of that shelter which is so necessary to them. The rocks appear to have been overrun by fire, and the stunted timber, which once grew there, is frequently seen lying along the surface of them; but it is not easy to be reconciled that anything should grow where there is so little appearance of soil. Between the fallen trees there are briars, with hurtleberry and gooseberry bushes, raspberries, &c., which invite the bears, in greater or lesser numbers, as they are a favourite food of that animal: beyond these rocky banks are found a few moose and fallow deer. The waters alone are abundantly inhabited. The bottom of the bay, which forms an amphitheatre, is clear and incised; and on the left corner of it, beneath a hill, 300 or 400 feet in height, and crowned by others of a still greater altitude, is the fort, picketed in with cedar palisadoes, and inclosing houses built with wood and covered with shingles. They are calculated for every convenience of trade, as well as to accommodate the proprietors and clerks during their short residence there. The north men live under tents, but the more frugal pork-eater lodges beneath his canoe. The soil immediately bordering on the lake has not proved very propitious, as nothing but potatoes have been found to answer the trouble of cultivation. This circumstance is probably owing to the cold damp fogs of the lake, and the moisture of the ground from the springs that issue from beneath the hills. There are meadows in the vicinity that yield abundance of hay for the cattle; but as to agriculture, it has not hitherto been an object of serious consideration. When the people from Montreal have arrived at the Grande Portage, which is nearly nine miles over, each of them has to carry eight packages of such goods and provisions as are necessary for the interior country. This is a labour which cattle cannot conveniently perform in summer, as both horses and oxen were tried by the company without success. They are only useful for light, bulky articles; or for transporting upon sledges, during the winter, whatever goods may remain there, especially provisions, of which it is usual to have a year's stock on hand. Having finished this toilsome part of their duty, if more goods are necessary to be transported, they are allowed a Spanish dollar for each package; and so inured are they to this kind of labour, that some of them have been known to set off with two packages of 90 lb. each, and return with two others of the same weight, in the course of six hours, being a distance of 18 miles over hills and mountains. This necessary part of the business being over, if the season be early they have some respite, but this depends upon the time the north men begin to arrive from their winter quarters, which they commonly do early in July. At this period, it is necessary to select from the pork-eaters a number of men, among whom are the recruits, or winterers, sufficient to man the north canoes necessary to carry to the river of the rainy lake the goods and provision requisite for the Arthabasca country; as the people of that country (owing to the shortness of the season and length of road they can come no further) are equipped there, and exchange ladings with the people of whom we are speaking, and both return whence they came. This voyage is performed in the course of a month, and they are allowed proportionable wages for their services. The north men, having arrived at the Grande Portage, are regaled with bread, pork, butter, liquor, and tobacco; and such as have not entered into agreements during the winter, which is customary, are contracted with to return and perform the voyage for one, two, or three years: their accounts are also settled, and such as choose to send any of their earnings to Canada, receive drafts to transmit to their relations or friends; and as soon as they can be got ready, which requires no more than a fortnight, they are again despatched to their respective departments. The people being despatched to their respective winter quarters, the agents from Montreal, assisted by their clerks, prepare to return thither, by getting the furs across the Portage, and re-making them into packages of 100 lb. weight each, to send them to Montreal; where they commonly arrive about the month of September. The mode of living at the Grande Portage is as follows:—The proprietors, clerks, guides, and interpreters mess together, to the number sometimes of 100, at several tables, in one large hall, the provision consisting of bread, salt-pork, beef, hams, fish, and venison, butter, peas, Indian corn, potatoes, tea, spirits, wine, &c., and plenty of milk, for which purpose several milch cows are constantly kept. The mechanics have rations of such provisions, but the canoe-men, both from the north and Montreal, have no other allowance here, or in the voyage, than Indian corn and melted fat. The corn for this purpose is prepared before it leaves Detroit, by boiling it in a strong alkali, which takes off the outer husk; it is then well washed, and carefully dried upon stages, when it is fit for use. One quart of this is boiled for two hours, over a moderate fire, in a gallon of water; to which, when it has boiled a short time, are added two ounces of melted suet; this causes the corn to split, and in the time mentioned makes a pretty thick pudding. If to this is added a little salt (but not before it is boiled, as it would interrupt the operation), it makes a wholesome, palatable food, and easy of digestion. This quantity is fully sufficient for a man's subsistence during 24 hours; though it is not sufficiently heartening to sustain the strength necessary for a state of active labour. The Americans call this dish hominee. The trade from the Grande Portage is, in some particulars, carried on in a different manner from that of Montreal. The canoes used in the latter transport are now too large for the former, and some of about half the size are procured from the natives, and are navigated by four, five, or six men, according to the distance which they have to go. They carry a lading of about 35 packages on an average; of these 23 are for the purpose of trade, and the rest are employed for provisions, stores, and baggage. In each of these canoes are a foreman and steersman; the one to be always on the look-out, and direct the passage of the vessel, and the other to attend the helm. They also carry it, whenever that office is necessary. The foreman has the command, and the middle-men obey both; the latter earn only two-thirds of the wages which are paid the two former. Independent of these a conductor or pilot is appointed to every four or six of these canoes, whom they are all obliged to obey; he is, or at least is intended to be, a person of superior experience, for which he is proportionably paid. In these canoes, thus loaded, they embark at the north side of the Portage, on the river Au Tourt, which is very inconsiderable; and after about two miles of a westerly course, are obstructed by the Partridge Portage, 600 paces long. In the spring this makes a considerable fall, when the water is high, over a perpendicular rock of 120 feet. Thence the river continues to be shallow, and requires great care to prevent the bottom of the canoe from being injured by sharp rocks, for a distance of three miles and a half to the Prairie, or Meadow, when half the lading is taken out, and carried by part of the crew, while two of them are conducting the canoe among the rocks, with the remainder, to the Carreboeuf Portage, three miles and a half more, when they unload and come back two miles, and embark what was left for the other hands to carry, which they also land with the former; all of which is carried 680 paces, and the canoe led up against the rapid. Hence the water is better calculated to carry canoes, and leads by a winding course to the north-west three miles to the Outard Portage, over which the canoe, and everything in her, is carried for 2,400 paces. At the further end is a very high hill to descend, over which hangs a rock upwards of 700 feet high. Then succeeds the Outard Lake, about six miles long, lying in a north-west course, and about two miles wide in the broadest part. After passing a very small rivulet, they come to the Elk Portage, over which the canoe and lading are again carried 1,120 paces; when they enter the lake of the same name, which is a handsome piece of water, running north-west about four miles, and not more than one mile and a half wide. They then land at the Portage de Cerise, over which, and in the face of a considerable hill, the canoe and cargo are again transported for 1,050 paces. This is only separated from the second Portage de Cerise by a mud-pond (where there is plenty of water lilies), of a quarter of a mile in length; and this is again separated by a similar pond, from the last Portage de Cerise, which is 410 paces. Here the same operation is to be performed for 380 paces. They next enter on the Mountain Lake, running north-west by west six miles long, and about two miles in its greatest breadth. In the centre of this lake, and to the right, is the Old Road, now little known; but an adequate notion may be formed of it from the road about to be described, which is universally preferred. This is first, the small new Portage over which everything is carried for 626 paces, over hill and gullies; the whole is then embarked on a narrow line of water, that meanders south-west about two miles and a half. It is necessary to unload here and carry canoe and cargo, and then proceed west half a mile, to the new Grande Portage, which is 3,100 paces in length, and over very rough ground, which requires the utmost exertions of the men, and frequently lames them: hence they approach the Rose Lake, the Portage of that name being opposite to the junction of the road from the Mountain Lake. Then they embark on the Rose Lake, about one mile from the east end of it, and steer west by south, in an oblique course, across it two miles; then west-north-west, passing the Petite Perche to the Marten Portage three miles. In this part of the lake the bottom is mud and slime, with about three or four feet of water over it; and here is frequently struck a canoe-pole of 12 feet long, without meeting any other obstruction than if the whole were water: it has, however, a peculiar suction or attractive power, so that it is difficult to paddle a canoe over it. There is a small space along the south shore, where the water is deep, and this effect is not felt. In proportion to the distance from this part, the suction becomes more powerful: I have indeed been told that loaded canoes have been in danger of being swallowed up, and have only owed their preservation to other canoes which were lighter. A traveller has found it very difficult to get away from this attractive power, with six men, and great exertion, though they did not appear to be in any danger of sinking. Over against this is a very high, rocky ridge on the south side, called Marten Portage, which is but 20 paces long, and separated from the Perche Portage, which is 480 paces, by a mud-pond, covered with white lilies. Hence the course is on the lake of the same name, west-south-west three miles to the height of land, where the waters of the Dove or Pigeon River terminate, and which is one of the sources of the great St. Lawrence in this direction. Having carried the canoe and lading over it 679 paces, they embark on the lake of Hauteur de Terre, which is in the shape of a horse-shoe. It is entered near the curve, and left at the extremity of the western limb, through a very shallow channel, where the canoe passes half loaded for 30 paces with the current, which leads through the succeeding lakes and rivers, and disembogues itself, by the River Nelson, into Hudson's Bay. The first of these is Lac de Pierres à Fusil, running west-north-west seven miles long, and two wide, and, making an angle at north-west one mile more, becomes a river for half a mile, tumbling over a rock, and forming a fall and Portage called the Escalier, of 55 paces: but hence it is neither lake nor river, but possesses the character of both, and ends between large rocks, which cause a current or rapid, falling into a lake-pond for about two miles and a half, west-north-west, to the Portage of the Cheval du Bois. Here the canoe and contents are carried three hundred and eighty paces, between rocks; and within a quarter of a mile is the Portage des Gros Pins, which is six hundred and forty paces over a high ridge. The opposite side of it is washed by a small lake, three miles round; and the course is through the east end or side of it, three quarters of a mile north-east, where there is a rapid. An irregular, meandering channel, between rocky banks, then succeeds for seven miles and a half, to the Maraboeuf Lake, which extends north four miles, and is three quarters of a mile wide, terminating by a rapid and *décharge* of one hundred and eighty paces, the rock of Saginaga being in sight, which causes a fall of about seven feet, and a portage of fifty-five paces. Lake Saginaga takes its name from its numerous islands. Its greatest length from east to west is about fourteen miles, with irregular inlets; it is nowhere more than three miles wide, and terminates at the small portage of La Roche, of forty-three paces. Thence is a rocky stony passage of one mile to Prairie Portage, which is very improperly named, as there is no ground about it that answers to that description, except a small spot at the embarking-place at the west end. To the east is an entire bog; and it is with great difficulty that the lading can be landed upon stages, formed by driving piles into the mud, and spreading branches of trees over them. The portage rises on a stony ridge, over which the canoe and cargo must be carried for six hundred and eleven paces. This is succeeded by an embarkation on a small bay, where the bottom is the same as has been described in the west end of Rose Lake, and it is with great difficulty that a laden canoe is worked over it, but it does not comprehend more than a distance of two hundred yards. Hence the progress continues through irregular channels, bounded by rocks, in a westerly course for about five miles, to the Portage des Couteaux, of one hundred and sixty-five paces, and the Lac des Couteaux, running about south-west-by-west twelve miles, and from a quarter to two miles wide. A deep bay runs east three miles from the west end, where it is discharged by a rapid river; and after running two miles west, it again becomes still water. In this river are two carrying-places—the one fifteen, and the other one hundred and ninety paces. From this to the Portage des Carpes is one mile north-west, leaving a narrow lake on the east that runs parallel with the Lac des Couteaux half its length, where there is a carrying-place, which is used when the water in the river last mentioned is too low. The Portage des Carpes is three hundred and ninety paces, whence the water spreads irregularly between rocks, five miles north-west and south-east, to the portage of Lac Bois Blanc, which is one hundred and eighty paces. Then follows the lake of that name, but, we think, improperly so called, as the natives name it the Lake Pascau Minac Sagaigan, or Dry Berries. When the French were in possession of this country, they had several trading establishments on the islands and banks of this lake. Since that period, the few people remaining, who were of the Algonquin nation, could hardly find subsistence, game having become so scarce that they depended principally upon fish and wild rice, which grows plentifully in these parts. Within three miles of the last portage is a remarkable rock, with a smooth face, but split and cracked in different parts, which hangs over the water. Into one of its horizontal chasms, a great number of arrows have been shot, which is said to have been done by a war party of the Nadowasis, or Sioux, who had done much mischief in this country, and left these weapons as a warning to the Chebois, or natives, that, notwithstanding its lakes, rivers, and rocks, it was not inaccessible to their enemies. Lake Croche is terminated by the Portage de Rideau, four hundred paces long, and derives its name from the appearance of the water falling over a rock of upwards of thirty feet. Several rapids succeed, with intervals of still water, for about three miles, to the Flacon Portage, which is very difficult, is four hundred paces long, and leads to the lake of La Croix, so named from its shape. It runs about north-west eighteen miles to the Beaver Dam, and then sinks into a deep bay nearly east. The course to the portage is west by north for sixteen miles more from the Beaver Dam, and into the east bay is a road which was frequented by the French, and followed through lakes and rivers until they came to Lake Superior by the river Caministiquia, thirty miles east of the Grande Portage. Portage la Croix is six hundred paces long; to the next portage is a quarter of a mile, and its length is forty paces; the river winding four miles to Vermilion Lake, which runs six or seven miles to the N.N.W., and by a narrow strait communicates with Lake Namaycan, which takes its name from a particular place at the foot of a fall, where the natives spear sturgeon. Its course is about N.N.W. and S.S.E., with a bay running east, that gives it the form of a triangle. Its length is about sixteen miles to the Nouvelle Portage. The discharge of the lake is from a bay on the left, and the portage one hundred and eighty paces, to which succeeds a very small river, whence there is but a short distance to the next Nouvelle Portage, three hundred and twenty paces long. It is then necessary to embark on a swamp, or overflowed country, where wild rice grows in great abundance. There is a channel or small river in the centre of this swamp, which is kept with great difficulty, and runs S. and N. one mile and a half, with deepening water. The course continues N.N.W. one mile, and to the Chaudiere Portage, which is caused by the discharge of the waters running on the left of the road from Lake Namaycan, which used to be the common route; but that which we have described is the safest as well as shortest. Hence there is some current, though the water is wide-spread, and its course about N. by W. three miles and a half to the Lac de la Pluie, which lies nearly E. and W.; thence, about fifteen miles, is a narrow strait that divides the land into two unequal parts, whence to its dscharge is a distance of twenty-four miles. There is a deep bay running N.W. on the right that is not included, and is remarkable for furnishing the natives with a kind of soft red stone, of which they make their pipes; it also affords an excellent fishery, both in the summer and winter; and from it is an easy, safe, and short road to the Lake du Bois (which we shall mention presently), for the Indians to pass in their small canoes, through a small lake and on a small river, whose banks furnish abundance of wild rice. The discharge of this lake is called Lake de la Pluie River, at whose entrance there is a rapid, below which there is a fine bay, where there had been an extensive picketed fort and building when possessed by the French: the site of it is at present a beautiful meadow, surrounded with groves of oaks. Hence there is a strong current for two miles, where the water falls over a rock twenty feet, and, from the consequent turbulence of the water, the carrying-place, which is three hundred and twenty paces long, derives the name of Chaudiere. Two miles onward is the present trading establishment, situated on a high bank on the north side of the river in 48° 37′ N. lat. Here the people from Montreal come to meet those who arrive from the Athabasca country, as has been already described, and exchange lading with them. This is also the residence of the first chief, or Sachem, of all the Algonquin tribes inhabiting the different parts of this country. He is by distinction called Nectam, which implies personal pre-eminence. Here also the elders meet in council, to treat of peace or war. This is one of the finest rivers in the north-west, and runs a course west and east one hundred and twenty computed miles; but, in taking its course and distance minutely, it is only eighty. Its banks are covered with a rich soil, particularly to the north, which, in many parts, are clothed with fine open groves of oak, with the maple, the pine, and the cedar. The southern bank is not so elevated, and displays the maple, the white birch, and the cedar, with the spruce, the alder, and various kinds of underwood. Its waters abound in fish, particularly the sturgeon, which the natives both spear and take with drag-nets. But, notwithstanding the promise of this soil, the Indians do not attend to its cultivation, though they are not ignorant of the common process, and are fond of the Indian corn, when they can get it from us. Though the soil at the fort is a stiff clay, there is a garden which, unassisted as it is by manure or any particular attention, is tolerably productive. We now proceed to mention the Lake du Bois, into which this river discharges itself in lat. 49° N., and was formerly famous for the richness of its banks and waters, which abounded with whatever was necessary to a savage life. The French had several settlements in and about it; but it might be almost concluded that some fatal circumstance had destroyed the game, as war and the small-pox had diminished the inhabitants, it having been very unproductive in animals since the British subjects have been engaged in travelling through it, though it now appears to be recovering its pristine state. The few Indians who inhabit it might live very comfortably if they were not so immoderately fond of spirituous liquors. This lake is also rendered remarkable in consequence of the Americans having named it as a spot from which a line of boundary, between them and British America, was to run west, until it struck the Mississippi; which, however, can never happen, as the north-west part of the Lake du Bois is in latitude 49°37 north, and longitude 94°31 west, and the northernmost branch of the source of the Mississippi is in latitude 47°38 north, and longitude 95°6 west, ascertained by Mr. Thomson, astronomer to the North-West Company, who was sent expressly for that purpose by the Government. He, in the same year, determined the northern bend of the Missouri to be in latitude 47°32 north, and longitude 101°25 west; and, according to the Indian accounts, it runs to the south of west, so that if the Missouri were even to be considered as the Mississippi, no western line could strike it. It does not appear to us to be clearly determined what course the line is to take, or from what part of Lake Superior it strikes through the country to the Lake du Bois. Were it to follow the principal waters to their source, it ought to keep through Lake Superior to the River St. Louis, and follow that river to its source, close to which is the source of the waters falling into the river of Lake de la Pluie, which is a common route of the Indians to the Lake du Bois. The St. Louis passes within a short distance of a branch of the Mississippi, where it becomes navigable for canoes. The Lake du Bois is, as far as we can learn, nearly round, and the canoe-course through the centre of it among a cluster of islands, some of which are so extensive that they may be taken for the mainland. The reduced course would be nearly south and north. But following the navigating course, we make the distance seventy-five miles, though in a direct line it would fall very short of that length. At about two-thirds of it there is a small carrying-place, when the water is low. The carrying-place out of the lake is on an island, and named Portage du Rat, in latitude 49'37 north, and longitude 94¼ west; it is about fifty paces long. The lake discharges itself at both ends of this island, and forms the river Winipic, which is a large body of water, interspersed with numerous islands, causing various channels and interruptions of portages and rapids. In some parts it has the appearance of lakes, with steady currents; its winding course to the Dalles is estimated at eight miles; to the Grand Décharge twenty-five miles and a half, which is a long carrying-place for the goods; thence to the little Décharge one mile and half; to the Terre Jaune Portage two miles and a half; then to its galet seventy yards; two miles and three-quarters to the Terre Blanche, near which is a fall of from four to five feet; three miles and a half to Portage de l'Isle, where there is a trading-post, and about eleven miles on the north shore a trading establishment, which is the road in boats to Albany River, and thence to Hudson's Bay. There is also a communication with Lake Superior, through what is called the Nipigan country, that enters the Lake Winipic, about thirty-five leagues east of the Grande Portage. In short, the country is so broken by lakes and rivers, that people may find their way in canoes in any direction they please. It is now four miles to Portage de l'Isle, which is but short, though several boats have been lost in attempting to run the rapid. From thence it is twenty-six miles to Jacob's Falls, which are about fifteen feet high, and six miles and a half to the woody point; forty yards from which is another portage. They both form a high fall, but not perpendicular. Thence to another galet, or rocky portage, is about two miles, which is one continual rapid and cascade, and about two miles further is the Chute à l'Esclave, which is upwards of thirty feet. The portage is long, through a point covered with wood; it is six miles and a half more to the barrier, and ten miles to the Grand Rapid. Thence, on the north side, is a safe road, when the waters are high, through small rivers and lakes, to the Lake du Bonnet, called the Pinnawas, from the person who discovered it: to the White River, so called from its being, for a considerable length, a succession of falls and cataracts, is twelve miles. Here are seven portages in so short a space that the whole of them are discernible at the same moment. From this to Lake du Bonnet is fifteen miles more, and four miles across it to the rapid. Here the Pinnawas road joins, and thence it is two miles to the Galet du Lac du Bonnet; from this to the Galet du Bonnet one mile and a half; thence to the portage of the same name is three miles. This portage is nearly half a league in length, and derives its name from a custom the Indians have of crowning stones, laid in a circle, on the highest rock in the portage, with wreaths of herbage and branches. There have been examples of men taking seven packages of ninety pounds each, at one end of the portage, and putting them down at the other without stopping. To this another small portage immediately succeeds over a rock producing a fall. Thence to the fall of Terre Blanche is two miles and a half; to the first portage Des Eaux qui Remuent is three miles; to the next, of the same name, is but a few yards distant; to the third and last, which is a décharge, is three miles and a half: and from this to the last portage of the river one mile and a half; and to the establishment, or provision house, is two miles and a half. Here also the French had their principal inland depôt, and got their canoes made. It is here that the present traders, going to great distances, and where provision is difficult to be procured, receive a supply to carry them to the Rainy Lake, or Lake Superior. From the establishment to the entrance of Lake Winipic is four miles and a half, latitude 50'37 north. The country, soil, produce, and climate, from Lake Superior to this place, bear a general resemblance, with a predominance of rock and water: the former is of the granite kind. Where there is any soil it is well covered with wood, such as oak, elm, ash of different kinds, maple of two kinds, pines of various descriptions, among which are the cypress, with the hickory, iron-wood, liard, poplar, cedar, black and white birch, &c. Vast quantities of wild rice are seen throughout the country, which the natives collect in the month of August for their winter stores. To the north of fifty degrees, it is hardly known, or at least does not come to maturity. Lake Winipic is the great reservoir of several large rivers, and discharges itself by the River Nelson into Hudson's Bay. The first in rotation, next to that we have just described, is the Assiniboin, or Red River, which, at the distance of forty miles coastwise, disembogues on the south-west side of lake Winipic; it alternately receives those two denominations from its dividing, at the distance of about thirty miles from the lake, into two large branches. The eastern branch, called the Red River, runs in a southern direction nearly to the head waters of the Mississippi. On this are two trading establishments. The country on either side is but partially supplied with wood, and consists of plains covered with herds of the buffalo and the elk, especially on the western side. On the eastern side are lakes and rivers, and the whole country is well wooded, level, abounding in beaver, bears, moose-deer, fallow-deer, &c. The natives, who are of the Algonquin tribe, are not very numerous, and are considered as the natives of Lake Superior. This country being near the Mississippi is also inhabited by the Nadowasis, who are the natural enemies of the former. The head of the water being the war-line, they are in a continual state of hostility; and though the Algonquins are equally brave, the others generally out-number them. It is very probable, therefore, that if the latter continue to venture out of the woods, which form their only protection, they will soon be extirpated. There is not, perhaps, a finer country in the world for the residence of uncivilized man than that which occupies the space between them, this river, and Lake Superior. It abounds in everything necessary to the wants and comforts of such a people. Fish, venison, and fowl, with wild rice, are in great plenty; while, at the same time, their subsistence requires that bodily exercise so necessary to health and vigour. This great extent of country was formerly very populous, but, from the information received, the aggregate of its inhabitants does not exceed three hundred warriors and, among the few seen, it appeared that the women were more numerous than the men. The rackoon is a native of this country, but it is seldom found to the northward of it. The other branch is called after the tribe of the Nadawasis, who here go by the name of Assiniboins, and are the principal inhabitants of it. It runs from off the north-north-west, and in the latitude of 51½ west, and longitude 103¾, rising in the same mountains as the river Dauphin, of which we shall speak in due order. They must have separated from their nation at a time beyond our knowledge: they live in peace with the Algonquins and Knisteneaux. The country between this and the Red River is almost a continual plain to the Missouri. The soil is sand and gravel, with a slight intermixture of earth, and produces a short grass The trees are very rare; nor are there on the banks of the river sufficient, except in particular spots, to build houses and supply firewood for the trading establishments, of which there are four principal ones. Both these rivers are navigable for canoes to their source, without a fall; though in some parts there are rapids, caused by occasional beds of lime-stone and gravel; but in general they have a sandy bottom. The Assiniboins, and some of the Fall, or Big-bellied Indians, are the principal inhabitants of this country, they occupy portions of the borders of the river; that next Lake Winipic, and about its source, being the station of the Algonquins and Knisteneaux, who have chosen it in preference to their own country. They do not exceed five hundred families. They are not beaver hunters, which accounts for their allowing the division just mentioned, as the lower and upper parts of this river have those animals, which are not found in the intermediate district. They confine themselves to hunting the buffalo, and trapping wolves, which cover the country. What they do not want of the former for raiment and food, they sometimes make into pemmican, or pounded meat, while they melt the fat, and prepare the skins in the hair for winter. The wolves they never eat, but prepare a tallow from their fat, and dress their skins; all which they exchange for arms and ammunition, rum, tobacco, knives, and various baubles, with those who go to traffic in their country. The Algonquins and the Knisteneaux, on the contrary, attend to the fur-hunting, so that they acquire the additional articles of cloth, blankets, &c., but their passion for rum often puts it out of their power to supply themselves with real necessaries. The next river of magnitude is the river Dauphin, which empties itself at the head of St. Martin's Bay, on the west side of the Lake Winipic, lat. nearly 55°15 north, taking its source in the same mountains as the last-mentioned river, as well as the Swan and Red-Deer River, the latter passing through the lake of the same name, as well as the former, and both continuing their course through the Manitoba Lake, which from thence runs parallel with Lake Winipic, to within nine miles of the Red River, and by what is called the River Dauphin disembogues its waters, as already described, into that lake. These rivers are very rapid, and interrupted by falls, &c., the bed being generally rocky. All this country, to the south branch of the Saskatchiwine, abounds in beaver, moose-deer, fallow-deer, elks, bears, buffaloes, &c. The soil is good, and wherever any attempts have been made to raise esculent plants, &c, it has been found productive. On these waters are three principal forts for trade —Fort Dauphin, which was established by the French before the conquest, Red Deer River, the Swan-River Forts, with occasional detached posts from these. The inhabitants are the Knisteneaux, from the north of Lake Winipic, and Algonquins from the country between the Red River and Lake Superior; and some from the Rainy Lake: but as they are not fixed inhabitants, their number cannot be determined: they do not, however, at any time, exceed two hundred warriors. In general they are good hunters. There is no other considerable river except the Saskatchewan, which we shall mention presently, that empties itself into the Lake Winipic. Those on the north side are inconsiderable, owing to the comparative vicinity of the high land that separates the waters coming this way from those discharging into Hudson's Bay. The course of the lake is about west-north west, and south south-east, and the east end of it is in 50° 37′ north. It contracts at about a quarter of its length to a strait, in lat. 51° 45′, and is no more than two miles broad, where the south shore is gained through islands, and crossing various bays to the discharge of the Saskatchewan in lat. 53° 15′. This lake, in common with those of this country, is bounded on the north with banks of black and grey rock, and on the south by a low, level country, occasionally interrupted with a ridge or bank of limestones lying in stratas, and rising to the perpendicular height of from twenty to forty feet; these are covered with a small quantity of earth, forming a level surface, which bears timber, but of a moderate growth, and declines to a swamp. Where the banks are low, it is evident in many places that the waters are withdrawn, and never rise to those heights which were formerly washed by them. The inhabitants who are found along this lake are of the Knisteneaux and Algonquin tribes, and but few in number, though game is not scarce, and there is fish in great abundance. The black bass is found there, and no further west; and beyond it no maple trees are seen, either hard or soft. On entering the Saskatchiwine, in the course of a few miles, the great rapid interrupts the passage. It is about three miles long. Through the greatest part of it the canoe is towed, half or full laden, according to the state of the waters: the canoe and its contents are then carried one thousand one hundred paces. The channel here is near a mile wide, the waters tumbling over ridges of rocks that traverse the river. The south bank is very high, rising upwards of fifty feet, of the same rock as seen on the south side of the Lake Winipic, and the north is not more than a third of that height. About two miles from this portage the navigation is again interrupted by the Portage of the Roche Rouge, which is a hundred yards long; and a mile and a half thence the river is barred by a range of islands, forming rapids between them; and through these it is the same distance to the rapid of Lake Travers, which is four miles right across, and eight miles in length. Then succeeds the Grande Decharge, and several rapids four miles to the Cedar Lake, which is entered through a small channel on the left, formed by an island, as going round it would occasion loss of time In this distance banks of rocks (such as have already been described) appear at intervals on either side; the rest of the country is low. This is the case along the south bank of the lake and islands, while the north side, which is very uncommon, is level throughout. This lake runs first west four miles, then as much more west-south-west, across a deep bay on the right, then six miles to the Point de Lievre, and across another bay again on the right; then north-west eight miles, across a still deeper bay on the right; and seven miles parallel with the north coast, north-north-west through islands, five miles more to Fort Bourbon, situated on a small island, dividing this from Mud Lake. The Cedar Lake is from four to twelve miles wide, exclusive of the bays. Its banks are covered with wood, and abound in game, and its waters produce plenty of fish, particularly the sturgeon. The Mud Lake must have formerly been a part of the Cedar Lake, but the immense quantity of earth and sand, brought down by the Saskatchiwine, has filled up this part of it for a circumference whose diameter is at least fifteen or twenty miles; part of which space is still covered with a few feet of water, but the greatest proportion is shaded with large trees, such as the liard, the swamp-ash, and the willow. This land consists of many islands, which, consequently, form various channels, several of which are occasionally dry, and bearing young wood. It is indeed more than probable that this river will, in the course of time, convert the whole of the Cedar Lake into a forest. To the north-west the cedar is not to be found. From this lake the Saskatchiwine may be considered as navigable to near its sources in the rocky mountains, for canoes and without a carrying-place, making a great bend to Cumberland House, on Sturgeon Lake. From the confluence of its north and south branches its course is westerly; spreading itself, it receives several tributary streams, and encompasses a large track of country, which is level, particularly along the south branch, but is little known. Beavers, and other animals, whose furs are valuable, are amongst the inhabitants of the north-west branch, and the plains are covered with buffaloes, wolves, and small foxes; particularly about the south branch, which, however, has of late claimed some attention, as it is now understood that where the plains terminate towards the rocky mountains, there is a space of hilly country clothed with wood, and inhabited also by animals of the fur kind. This has been actually determined to be the case towards the head of the north branch, where the trade has been carried to about lat. 54° north, and lon. 114½° west. There were on this river five principal factories for the convenience of trade with the natives: Nepawi House, South-branch House, Fort-George House, Fort-Augustus House, and Upper Establishment. The inhabitants are as follow:—At Nepawi, and South-Branch House, about thirty tents of Knisteneaux, or ninety warriors; and sixty tents of Stone-Indians, or Assiniboins, who are their neighbours, and are equal to two hundred men: their hunting ground extends upwards to about the Eagle Hills. Next to them are those who trade at Forts George and Augustus, and are about eighty tents or upwards of Knisteneaux; on either side of the river their number may be two hundred. In the same country are one hundred and forty tents of Stone Indians; not quite half of them inhabit the west woody country; the others never leave the plains, and their numbers cannot be less than four hundred and fifty men. At the Southern Head-waters of the north branch dwells a tribe called Sarsees, consisting of about thirty-five tents, or one hundred and twenty men. Opposite to those eastward, on the head-waters of the south-branch, are the Picaneaux, to the number of from twelve to fifteen hundred men. Next to them, on the same water, are the Blood Indians, of the same nation as the last, to the number of about fifty tents, or two hundred and fifty men. From them downwards extend the Black-Feet Indians, of the same nation as the two last tribes: their number may be eight hundred men. Next to them, and who extend to the confluence of the south and north branch, are the Fall or Big-bellied Indians, who may amount to about six hundred warriors. Of all these different tribes, those who inhabit the broken country on the north-west side, and the source of the north branch, are beaver hunters; the others deal in provisions, wolf, buffalo, and fox skins; and many people on the south branch do not trouble themselves to come near the trading establishments. Those who do, choose such establishments as are next to their country. The Stone Indians here are the same people as the Stone Indians, or Assiniboins, who inhabit the river of that name already described, and both are detached tribes from the Nadawasis, who inhabit the western side of the Mississippi, and lower part of the Missouri. The Fall or Big-bellied Indians are from the south-eastward also, and of a people who inhabit the plains from the north bend of the last-mentioned river, lat. 47° 32′ north, long. 101° 25′ west, to the south bend of the Assiniboin River, to the number of seven hundred men. Some of them occasionally come to the latter river to exchange dressed buffalo robes and bad wolf-skins for articles of no great value. The Picaneaux, Black-Feet, and Blood Indians are distinct people, speak a language of their own, and it is probable travel north-westward, as well as the others just mentioned; nor have any Indians been heard of with whose language that which they speak has any affinity. They are the people who deal in horses and take them upon the war-parties towards Mexico; from which it is evident that the country to the south-east of them consists of plains, as those animals could not well be conducted through a hilly and woody country, intersected by waters. The Sarsees, who are but few in number, appear from their language to come, on the contrary, from the north-westward, and are of the same people as the Rocky Mountain Indians who, it has been reported, are a tribe of the Chepewyans; and, as for the Knisteneaux, there is no question of their having been, and continuing to be, invaders of this country, from the eastward. Formerly, they struck terror into all the other tribes whom they met; but now they have lost the respect that was paid them; as those whom they formerly considered as barbarians are now their allies, and consequently become better acquainted with them, and have acquired the use of fire-arms. The former are still proud without power, and affect to consider the others as their inferiors; those, consequently, are extremely jealous of them, and, depending upon their own superiority in numbers, will not submit tamely to their insults, so that the consequences often prove fatal, and the Knisteneaux are thereby decreasing both in power and number. Spirituous liquours also tend to their diminution, as they are instigated thereby to engage in quarrels, which frequently have the most disastrous termination, among themselves. The Stone Indians must not be considered in the same point of view respecting the Knisteneaux, for they have been generally obliged, from various causes, to court their alliance. They, however, are not without their disagreements, and it is sometimes very difficult to compose their differences. These quarrels occasionally take place with the traders, and sometimes have a tragical conclusion. They generally originate in consequence of stealing women and horses; they have great numbers of the latter throughout their plains, which are brought, as has been observed, from the Spanish settlements in Mexico; and many of them have been seen, even in the back parts of this country, branded with the initials of their original owners' names. Those horses are distinctly employed as beasts of burden, and to chase the buffalo. The former are not considered as being of much value, as they may be purchased for a gun which costs no more than a guinea in Great Britain. Many of the hunters cannot be purchased with ten, the comparative value, which exceeds the property of any native. Of these useful animals no care whatever is taken, and when they are no longer employed, they are turned loose, winter and summer, to provide for themselves. Here it is to be observed that the country in general, on the west and north side of this great river, is broken by the lakes and rivers with small intervening plains, where the soil is good, and the grass grows to some length. To these the male buffaloes resort for the winter, and if it be very severe, the females also are obliged to leave the plains. But to return to the route by which the progress west and north is made through this continent. We leave the Saskatchiwine by entering the river which forms the discharge of the Sturgeon Lake, on whose east bank is situated Cumberland House, in lat. 53° 56′ N., long. 102° 15′. The distance between the entrance of the lake and Cumberland House is estimated at twenty miles. It is very evident that the mud which is carried down by the Saskatchiwine River has formed the land that lies between it and the lake for the distance of upwards of twenty miles in the line of the river, which is inundated during one-half of the summer, though covered with wood. This lake forms an irregular horse-shoe, one side of which runs to the north-west, and bears the name of Pine-Island Lake; and the other, known by the name already mentioned, runs to the east of north, and is the largest. Its length is about twenty-seven miles, and its greatest breadth about six miles. The north side of the latter is the same kind of rock as that described in Lake Winipic, on the west shore. In lat. 54° 16′ N., the Sturgeon-Weir River discharges itself into this lake, and its bed appears to be of the same kind of rock, and is almost a continual rapid. Its direct course is about west by north; and, with its windings, is about thirty miles. It takes its waters into the Beaver Lake, the south-west side of which consists of the same rock, lying in thin strata. The route then proceeds from island to island for about twelve miles, and along the north shore for four miles more, the whole being a north-west course to the entrance of a river, in lat. 54° 32′ N. The lake, for this distance, is about four or five miles wide, and abounds with fish common to the country. The part of it upon the right of that which has been described appears more considerable. The islands are rocky, and the lake itself surrounded by rocks. The communication hence to the Bouleau Lake alternately narrows into rivers and spreads into small lakes. The interruptions are the Pente Portage, which is succeeded by the Grand Rapid, where there is a *décharge*, the Carp Portage; the Bouleau Portage, in lat. 54° 50′ N.; including a distance, together with the windings, of thirty-four miles in a westerly direction. The Lake de Bouleau then follows. This lake might with greater propriety be denominated a canal, as it is not more than a mile in breadth. Its course is rather to the east of north, for twelve miles, to Portage de l'Isle. Thence there is still water to Portage d'Epinettes, except an adjoining rapid. The distance is not more than four miles westerly. After crossing this portage, it is not more than two miles to Lake Miron, which is in lat. 55° 7′ N. Its length is about twelve miles, and its breadth irregular, from two to ten miles. It is only separated from Lac du Chitique, or Pelican Lake, by a short, narrow, and small strait. That lake is not more than seven miles long, and its course about north-west. The Lake des Bois then succeeds, the passage to which is through small lakes, separated by falls and rapids. The first is a décharge; then follow the three galets in immediate succession. Hence Lake des Bois runs about twenty-one miles. Its course is south-south-east and north-north-west, and is full of islands. The passage continues through an intricate, narrow, winding, and shallow channel, for eight miles. The interruptions in this distance are frequent, but depend much on the state of the waters. Having passed them, it is necessary to cross the Portage de Traite, or, as it is called by the Indians, Athiquisipichigan Ouinigam, or the Portage of the Stretched Frog-skin, to the Missinipi. The waters already described discharge themselves into Lake Winipic, and augment those of the River Nelson. These which we are now entering are called the Missinipi, or great Churchill River. All the country to the south and east of this, within the line of the progress that has been described, is interspersed by lakes, hills, and rivers, and is full of animals of the fur kind, as well as the moose-deer. Its inhabitants are the Knisteneaux Indians, who are called by the servants of the Hudson's Bay Company, at York, their home-guards. The traders from Canada succeeded for several years in getting the largest proportion of their furs, till the years after, when the servants of that company thought proper to send people amongst them (and why they did not do it before is best known to themselves) for the purpose of trade and securing their credit, which the Indians were apt to forget. From the short distance they had to come, and the quantity of goods they supplied, the trade has, in a great measure, reverted to them, as the merchants from Canada could not meet them upon equal terms. What added to the loss of the latter was the murder of one of their traders by the Indians about this period. Of these people not above eighty men have been known to the traders from Canada, but they consist of a much greater number. The Portage de Traite, it is very well known, received its name from Mr. Joseph Frobisher, who penetrated into this part of the country from Canada as early as the years 1774 and 1775, where he met with the Indians in the spring, on their way to Churchill, according to annual custom, with their canoes full of valuable furs. They traded with him for as many of them as his canoes could carry; and in consequence of this transaction, the portage received, and has since retained, its present appellation. He also denominated these waters the English River. The Missinipi is the name which it received from the Knisteneaux, when they first came to this country, and either destroyed or drove back the natives, whom they held in great contempt on many accounts, but particularly for their ignorance in hunting the beaver, as well as in preparing, stretching, and drying the skins of that animal. And as a sign of their derision, they stretched the skin of a frog, and hung it up at the portage. This was, at that time, the utmost extent of their conquest or wayfaring progress west, and is in lat. 55° 25′ N., and long. 103¾° W. The river here, which bears the appearance of a lake, takes its name from the portage, and is full of islands. It runs from east to west about sixteen miles, and is from four to five miles broad. Then succeed falls and cascades, which form what is called the Grand Rapid. Thence there is a succession of small lakes and rivers, interrupted by rapids and falls, viz., the Portage de Bareel, the Portage de l'Isle, and that of the Rapid River. The course is twenty miles from east-south-east to north-north-west. The Rapid River Lake then runs west five miles, and is of an oval form. The Rapid River is the discharge of Lake la Ronge, where there has been an establishment for trade from the year 1782. Since the small-pox ravaged these parts, there have been but few inhabitants; these are of the Knisteneaux tribe, and do not exceed thirty men. The direct navigation continues to be through rivers and canals, interrupted by rapids; and the distance to the first décharge is four miles, in a westerly direction. Then follows Lake de la Montagne, which runs south-south-west three miles and a half, then north six miles, through narrow channels, formed by islands, and continues north-north-west five miles to the portage of the same name, which is no sooner crossed than another appears in sight, leading to the Otter Lake, whence it is nine miles westerly to the Otter Portage, in lat. 55° 39′. Between this and the Portage du Diable are several rapids, and the distance is three miles and a half. Then succeeds the lake of the same name, running from south-east to north-west, five miles, and west four miles and a half. There is then a succession of small lakes, rapids, and falls, producing the Portage des Ecors, Portage du Galet, and Portage des Morts, the whole comprehending a distance of six miles, to the lake of the latter name. On the left side is a point covered with human bones, the relics of the small-pox; which circumstance gave the portage and the lake this melancholy denomination. Its course is south-west fifteen miles, while its breadth does not exceed three miles From thence a rapid river leads to Portage de Hallier, which is followed by Lake de l'Isle d'Ours. It is, however, improperly called a lake, as it contains frequent impediments amongst its islands, from rapids. There is a very dangerous one about the centre of it, which is named the rapid *qui ne parle point*, or that never speaks, from its silent whirlpool-motion. In some of the whirlpools the suction is so powerful that they are carefully avoided. At some distance from the silent rapid is a narrow strait, where the Indians have painted red figures on the face of a rock, and where it was their custom formerly to make an offering of some of the articles which they had with them, in their way to and from Churchill. The course in this lake, which is very meandering, may be estimated at thirty-eight miles, and is terminated by the Portage du Canot Tourner, from the danger to which those are subject who venture to run this rapid. Thence a river of one mile and a half north-west course leads to the Portage de Bouleau, and in about half a mile to Portage des Epingles, so called from the sharpness of its stones. Then follows the Lake des Souris, the direction across which is amongst islands, north-west by west six miles. In this traverse is an island, which is remarkable for a very large stone, in the form of a bear, on which the natives have painted the head and snout of that animal, and here they also were formerly accustomed to offer sacrifices. This lake is separated only by a narrow strait from the Lake du Serpent, which runs north-north-west seven miles, to a narrow channel that connects it with another lake bearing the same name, and running the same course for eleven miles, when the rapid of the same denomination is entered on the west side of the lake. It is to be remarked here that for about three or four miles on the north-west side of this lake, there is a high bank of clay and sand, clothed with cypress trees, a circumstance which is not observable on any lakes hitherto mentioned, as they are bounded, particularly on the north, by black and grey rocks. It may also be considered as a most extraordinary circumstance, that the Chepewyans go north-west hence to the barren grounds, which are their own country, with the assistance of canoes; as it is well known that in every other part which has been described, from Cumberland House, the country is broken on either side of the direction to a great extent; so that a traveller could not go at right angles with any of the waters already mentioned without meeting with others in every eight or ten miles. This will also be found to be very much the case in proceeding to Portage la Loche. The last-mentioned rapid is upwards of three miles long, north-west by west; there is, however, no carrying, as the line and poles are sufficient to drag and set the canoe against the current. Lake Croche is then crossed in a westerly direction of six miles, though its whole length may be twice that distance; after which it contracts to a river that runs westerly for ten miles, when it forms a bend, which is left to the south, and entering a portion of its waters called the Grass River, whose meandering course is about six miles, but in a direct line not more than half that length, where it receives its waters from the great river, which then runs westerly eleven miles before it forms the Knee Lake, whose direction is to the north of west. It is full of islands for eighteen miles, and its greatest apparent breadth is not more than five miles. The portage of the same name is several hundred yards long, and over large stones. Its latitude is 55° 50' and longitude 106° 30'. Two miles further north is the commencement of the Croche Rapid, which is a succession of cascades for about three miles, making a bend due south to the Lake du Primeaux, whose course is various, and through islands, to the distance of about fifteen miles. The banks of this lake are low, stony, and marshy, whose grass and rushes afford shelter and food to great numbers of wild fowl. At its western extremity is Portage la Puise, from whence the river takes a meandering course, widening and contracting at intervals, and is much interrupted by rapids. After a westerly course of twenty miles, it reaches Portage Pellet. Hence, in the course of seven miles, are three rapids, to which succeeds the Shagoina Lake, which may be eighteen miles in circumference. Then Shagoina Strait and Rapid lead into the Lake of Isle à la Croisé, in which the course is south twenty miles, and south-south-west fourteen miles to the Point au Sable; opposite to which is the discharge of the Beaver River, bearing south six miles. The lake, in the distance run, does not exceed twelve miles in its greatest breadth. It now turns west-south-west, the Isle à la Croisé being on the south and the mainland on the north; and it clears the one and the other in the distance of three miles, the water presenting an open horizon to right and left; that on the left formed by a deep, narrow bay, about ten leagues in depth; and that to the right by what is called La Rivière Creuse, or Deep River, being a canal of still water, which is here four miles wide. On following the last course, Isle à la Croisé fort appears on a low isthmus, at the distance of five miles, and is in latitude 55° 25' N., and longitude 107° 48' W. This lake and fort take their names from the island just mentioned, which, as has already been observed, received its denomination from the game of the cross, which forms a principal amusement among the natives. The situation of this lake, the abundance of the finest fish in the world to be found in its waters, the richness of its surrounding banks and forests in moose and fallow deer, with the vast numbers of the smaller tribes of animals, whose skins are precious, and the numerous flocks of wild fowl that frequent it in the spring and fall, make it a most desirable spot for the constant residence of some, and the occasional rendezvous of others, of the inhabitants of the country, particularly of the Knisteneaux. Who the original people were that were driven from it when conquered by the Knisteneaux is not now known, as not a single vestige remains of them. The latter, and the Chepewyans, are the only people that have been known here; and it is evident that the last-mentioned consider themselves as strangers, and seldom remain longer than three or four years without visiting their relations and friends in the barren grounds, which they term their native country. They were for some time treated by the Knisteneaux as enemies, who now allow them to hunt to the north of the tract which has been described, from Fort du Traite upwards; but when they occasionally meet them they insist on contributions, and frequently punish resistance with their arms. This is sometimes done at the forts, or places of trade, but then it appears to be a voluntary gift. A treat of rum is expected on the occasion, which the Chepewyans on no other account ever purchase; and those only who have had frequent intercourse with the Knisteneaux have any inclination to drink it. When the Europeans first penetrated into this country in 1777, the people of both tribes were numerous, but the small-pox was fatal to them all; so that there does not exist of the one, at present, more than forty resident families, and the other has from about thirty to two hundred families. These numbers are applicable to the constant and less ambitious inhabitants, who are satisfied with the quiet possession of a country affording, without risk or much trouble, everything necessary to their comfort; for since traders have spread themselves over it, it is no more the rendezvous of the errant Knisteneaux, part of whom used annually to return thither from the country of the Beaver River, which they had explored to its source in their war and hunting excursions, and as far as the Saskatchiwine, where they sometimes met people of their own nation, who had prosecuted similar conquests up that river. In that country they found abundance of fish and animals, such as have already been described, with the addition of the buffaloes, who range in the partial patches of meadow scattered along the rivers and lakes. From thence they returned in the spring to the friends whom they had left, and, at the same time, met with others who had penetrated, with the same designs, into the Athabasca country, which will be described hereafter. The spring was the period of this joyful meeting, when their time was occupied in feasting, dancing, and other pastimes, which were occasionally suspended for sacrifice and religious solemnity; while the narratives of their travels, and the history of their wars, amused and animated the festival. The time of rejoicing was but short, and was soon interrupted by the necessary preparations for their annual journey to Churchill, to exchange their furs for such European articles as were now become necessary to them. The shortness of the seasons, and the great length of their way, requiring the utmost despatch, the most active men of the tribe, with their youngest women, and a few of their children, undertook the voyage, under the direction of some of their chiefs, following the waters already described, to their discharge at Churchill Factory, which are called, as has already been observed, the Missinipi, or Great Waters. There they remained no longer than was sufficient to barter their commodities, with a supernumerary, and a day or two to gratify themselves with the indulgence of spirituous liquors. At the same time, the inconsiderable quantity they could purchase to carry away with them, for a regale with their friends, was held sacred, and reserved to heighten the enjoyment of their return home, when the amusements, festivity, and religious solemnities of the spring were repeated. The usual time appropriated to these convivialities being completed, they separated, to pursue their different objects; and if they were determined to go to war, they made the necessary arrangements for their future operations. But we must now renew the progress of the route. It is not more than two miles from Isle à la Crosse Fort to a point of land which forms a cheek of that part of the lake called the Rivière Creuse, which preserves the breadth already mentioned for upwards of twenty miles; then contracts to about two for the distance of ten miles more, when it opens to Lake Clear, which is very wide, and commands an open horizon, keeping the west shore for six miles. The whole of the distance mentioned is about north-west, when, by a narrow, crooked channel, turning to the south of west, the entry is made into Lake du Bœuf, which is contracted, near the middle, by a projecting sandy point; independent of which it may be described as from six to twelve miles in breadth, thirty-six miles long, and in a north-west direction. At the north-west end, in lat. 56° 8′, it receives the waters of the River la Loche, which, in the fall of the year, is very shallow, and navigated with difficulty even by half-laden canoes. Its water is not sufficient to form strong rapids, though from its rocky bottom the canoes are frequently in considerable danger. Including its meanders, the course of this river may be computed at twenty-four miles, and receives its first waters from the lake of the same name, which is about twenty miles long, and six wide; into which a small river flows, sufficient to bear loaded canoes, for about a mile and a half, where the navigation ceases; and the canoes, with their lading, are carried over the Portage la Loche for thirteen miles. This portage is the ridge that divides the waters which discharge themselves into Hudson's Bay from those that flow into the northern ocean, and is in lat. 56° 20′ and long. 109° 15′ W. It runs south-west until it loses its local height between the Saskatchiwine and Elk rivers. Close on the bank of the former, in lat. 53° 36′ N. and long. 113° 45′ W., it may be traced in an easterly direction toward lat. 58° 12′ N., and long. 103½° west, when it appears to take its course due north, and may probably reach the frozen seas. From Lake le Souris, the banks of the rivers and lakes display a smaller portion of solid rock. The land is low and stony, intermixed with a light sandy soil, and clothed with wood. That of the Beaver River is of a more productive quality, but no part of it has ever been cultivated by the natives or Europeans, except a small garden at the Isle à la Crossé, which well repaid the labour bestowed upon it. The Portage la Loche is of a level surface, in some parts abounding with stones, but in general it is an entire sand, and covered with the cypress, the pine, the spruce fir, and other trees natural to its soil. Within three miles of the north-west termination, there is a small round lake, whose diameter does not exceed a mile, and which affords a trifling respite to the labour of carrying. Within a mile of the termination of the portage is a very steep precipice, whose ascent and descent appear to be equally impracticable in any way, as it consists of a succession of eight hills, some of which are almost perpendicular; nevertheless, the Canadians contrive to surmount all these difficulties, even with their canoes and lading. This precipice, which rises upwards of a thousand feet above the plain beneath it, commands a most extensive and romantic prospect. From thence the eye looks down on the course of the little river, by some called the Swan River and by others the Clear Water and Pelican River, beautifully meandering for upwards of thirty miles. The valley, which is at once refreshed and adorned by it, is about three miles in breadth, and is confined by two lofty ridges of equal height, displaying a most delightful intermixture of wood and lawn, and stretching on till the blue mist obscures the prospect. Some parts of the inclining heights are covered with stately forests, relieved by promontories of the finest verdure, where the elk and buffalo find pasture. These are contrasted by spots where fire has destroyed the woods, and left a dreary void behind it. Nor was the moving scenery of human occupation wanting to complete the picture afforded by this wonderful display of uncultivated nature. From this elevated situation the people were beheld diminished, as it were, to half their size, employed in pitching their tents in a charming meadow, and among the canoes, which, being turned upon their sides, presented their reddened bottoms in contrast with the surrounding verdure. At the same time, the process of gumming them produced numerous small spires of smoke, which, as they rose, enlivened the scene, and at length blended with the larger columns that ascended from the fires where the suppers were preparing. The month of September is the most enjoyable time to view and dwell upon such extraordinary scenery; and as it is the rutting season of the elk, the whistling of that animal is heard in all the variety which the echoes can afford it. This river, which waters and reflects such enchanting scenery, runs, including its windings, upwards of eighty miles, when it discharges itself into the Elk River, according to the denomination of the natives, but commonly called by the white people the Athabasca River, in lat. 56° 42′ N. At a small distance from Portage la Loche, several carrying-places interrupt the navigation of the river, about the middle of which are some mineral springs, whose margins are covered with sulphureous incrustations. At the junction or fork, the Elk River is about three-quarters of a mile in breadth, and runs in a steady current, sometimes contracting, but never increasing, its channel, till, after receiving several small streams, it discharges itself into the lake of the hills, in lat. 58° 36′ N. At about twenty-four miles from the fork, are some bituminous fountains, into which a pole of twenty feet long may be inserted without the least resistance. The bitumen is in a fluid state, and when mixed with gum or the resinous substance collected from the spruce fir, serves to gum the canoes. In its heated state it emits a smell like that of sea-coal. The banks of the river, which are there very elevated, discover veins of the same bituminous quality. At a small distance from the Fork, houses have been erected for the convenience of trading with a party of the Knisteneaux, who visit the adjacent country for the purpose of hunting. At the distance of about forty miles from the lake is the old establishment, as formed by Mr. Pond in the year 1778-9, and which was the only one in this part of the world till the year 1785. In the year 1788 it was transferred to the Lake of the Hills, and formed on a point on its southern side, at about eight miles from the discharge of the river. It was named Fort Chepewyan, and is in lat. 58° 38′ N., long. 110° 26′ W., and much better situated for trade and fishing, as the people here have recourse to water for their support. This being the place which I made my head-quarters for eight years, and from whence I took my departure on both my expeditions, I shall give some account of it, with the manner of carrying on the trade here, and other circumstances connected with it. The laden canoes which leave Lake la Pluie about the 1st of August do not arrive here till the latter end of September or the beginning of October, when a necessary proportion of them is dispatched up the Peace River to trade with the Beaver and Rocky Mountain Indians. Others are sent to the Slave River and Lake, or beyond them, and traffic with the inhabitants of that country. A small part of them, if not left at the Fork of the Elk River, return thither for the Knisteneaux, while the rest of the people and merchandise remain here to carry on the trade with the Chepewyans. During a short period of the spring and fall, great numbers of wild fowl frequent this country, which prove very gratifying food after such a long privation of flesh-meat. It is remarkable, however, that the Canadians who frequent the Peace, Saskatchiwine, and Assiniboin Rivers, and live altogether on venison, have a less healthy appearance than those whose sustenance is obtained from the waters. At the same time the scurvy is wholly unknown among them. In the fall of the year the natives meet the traders at the forts, where they barter the furs or provisions which they may have procured; they then obtain credit, and proceed to hunt the beavers, and do not return till the beginning of the year, when they are again fitted out in the same manner, and come back the latter end of March or the beginning of April. They are now unwilling to repair to the beaver hunt until the waters are clear of ice, that they may kill them with fire-arms, which the Chepewyans are averse to employ The major part of the latter return to the barren grounds, and live during the summer with their relations and friends in the enjoyment of that plenty which is derived from numerous herds of deer. But those of that tribe who are most partial to these deserts cannot remain there in winter, and they are obliged, with the deer, to take shelter in the woods during that rigorous season, when they contrive to kill a few beavers, and send them by young men to exchange for iron utensils and ammunition. For many years the people of Athabasca sent or carried their furs regulary to Fort Churchill, Hudson's Bay, and some of them have since that time repaired thither, notwithstanding they could have provided themselves with all the necessaries which they required. The difference of the price set on goods here and at the factory made it an object with the Chepewyans to undertake a journey of five or six months, in the course of which they were reduced to the most painful extremities, and often lost their lives from hunger and fatigue. At present, however, this traffic is in a great measure discontinued, as they were obliged to expend in the course of their journey that very ammunition which was its most alluring object." America continues to be the source whence the most beautiful and most useful furs are procured. The most important company now in existence is the Hudson's Bay Company. In importance, the American Fur Company stands next. There is also a Russo-American and the Danish-Greenland Company, besides many private trading firms. But it was the competition and success of the North-West Trading Company that led the Hudson's Bay and others to feel and recognise the importance of

the trade. Ultimately both associations united under the name of the Hudson's Bay Fur Company. The following is an account of the various skins, furs, and felts imported into the United Kingdom in 1866, taken from "Macculloch's Dictionary:"—Bear-skins, 9,770; value, £11,305. Beaver, 191,913; £83,491. Coney, 841,934; £6,075. Deer (undressed), 24,418; £2,640—Dressed, 11,379; £2,275. Ermine, 342,290; £28,106. Fisher, 5,919; £9,028. Fitch, 46,541; £6,161. Fox (silver), 1,584; £6,738—Other sorts, 108,974; £56,136. Goat (undressed), 941,080; £113,163—Dressed, 1,895,769; £224,923. Kid (undressed), 37,013; £1,852—Dressed, 266,285; £23,118. Lamb (undressed), 1,209,616; £59,351—Dressed, 69,274; £5,294. Lynx, 40,849; £17,644. Marten, 147,417; £110,552. Musquash, 2,118,663; £119,127. Nubia, 47,706; £6,471. Otter (common), 18,089; £12,250—Sea, 1,528; £12,834. Racoon, 408,203; £49,047. Sable, 3,929; £7,350. Seal, 513,671; £93,719. Sheep (undressed), 3,091,352; £320,560—Dressed, 1,761,865; £98,840. Squirrel, or Calabar, 474,424; £7,907. Chinchilla, 208,484; £44,508. Kolinski, 71,327; £8,917. Wolf, 8,886; £2,794. Unenumerated furs, 2,130,239; £64,498. Total computed value, £1,652,018.

FURRIER. The furrier cures, dyes, and makes up several kinds of furs or skins with the hair on, suitable for muffs, the lining of robes, &c.

FUSTIAN [Ger. *Barchent*, Du. *Fustein*, Da. *Olmerdug*, *Parkken*, Sw. *Parkum*, Fr. *Futaine*, It. *Fustagno*, *Frustango*], a kind of cotton material ribbed on one side. The seat of the manufacture is Manchester. The annual exports to the Continent sum up £200,000.

G

GAGE OR GAUGE. When one ship is to the windward of another, she is said to have the windward gage of her. The number of feet that a vessel sinks in the water is likewise called the ship's gage.

GALANGAL [Ger. *Galgant*, Fr., It., Sp., and Port. *Galanga*] comes from China, and of it there are two sorts, the greater and the lesser. The greater galangal is a knotty root, with several arches on the surface, of a reddish brown colour on the outside, and a yellowish white within, which greatly resembles ginger in its smell, taste, and chemical composition. It is the root of the Kemp feria Galanga. The lesser, which is most esteemed, is a knotty, jointy root, about an inch long, and about half an inch thick, of a brownish red coat, pale red colour within, having several circular rings on the outside, of a hot, bitterish, aromatic, biting taste, like pepper, and a fragrant smell. It is used as a spice.

GALBANUM a gum issuing from the stem of umbilliferous plant growing in Persia and many parts of Africa. It is sometimes met with in shops in loose granules, called drops and tears, and sometimes in large masses formed of a number of these blended together; but in these masses, some accidental foulness is often mixed with the gum. The single drops usually approach to a roundish, oblong, pearl-like form. Galbanum is soft like wax, and when fresh drawn, white, but it afterwards becomes yellowish or reddish. It is of a strong smell, of an acid, bitterish taste; it is inflammable in the manner of rosin, and soluble in the water like gum.

GALLS [Ger. *Gallapfel*, Fr. *Galles*. *Noix de galle*] are tumours produced by the puncture of insects on several species of the oak. Other trees are liable to the same accidents, and produce galls of various forms and sizes, but those of the oak only are used in medicine, and for the purposes of dying and making ink. There are two sorts of galls, viz., Oriental and European: the former comes from Aleppo: they are of the size of a small nutmeg, not of its oblong figure, but round, and have usually a considerable number of tubercles rising on their surface, broad at the base and terminating at a point. They are of a very solid and firm texture, hard to break, very heavy, and of a whitish, and pale brown, and bluish, and somewhat of a blackish colour. The European galls, as those of France and Italy, are rounder than those of Aleppo, of the same size, and have perfectly smooth surfaces, without any protuberances; they are of a pale whitish, or brownish colour, very light, easily broken, and often spongy, and cavernous within. They are of a much less austere taste, and of much less value, both in manufactures and medicine.

GAMBOGE [Ger., Dan., and Rus. *Gummigutt*, Fr. *Gommegutte*, It. *Gommagutta*] is a concreted vegetable juice, and is partly of a gummy and partly of a resinous nature. It is brought to us in the form of orbicular masses, or of cylindrical rolls of various sizes, and is of a dense, compact, and firm texture, and a beautiful yellow. The best sort is of a deep yellow or orange colour, breaks shining, and is free from dross; it has no smell, and very little taste, unless kept in the mouth for some time, when it impresses a slight sense of acrimony. It is principally used as a pigment in water colours.

GARBLE, the dust, dross, and refuse of spices and drugs.

GARBLED. Drugs, dyestuffs, &c., are said to be garbled when they are reduced to small broken fragments.

GARBLING is the picking out the worst of any commodity.

GARNET [Ger. *Granaten*, *Granatsteine*, Du. *Granaaten*, Da. and Sw. *Granater*, Fr. *Granets*, It. *Granati*, Sp. *Granadas*], a very beautiful gem of a red colour, with an admixture of blue. When pure and free from blemishes, it is little inferior in appearance to the Oriental ruby, though only of a middle degree of hardness between the sapphire and common crystal. It is found of various sizes, from that of a pin's head to an inch in diameter. Among lapidaries and jewellers genuine garnets are known by different names, according to their different degrees of colour. (1.) The garnet simply so called is the finest and most valuable kind, being of a very deep blood red, with a faint admixture of blue. (2.) The rock ruby, a name very improperly given to the garnet when it is of a very strong, but not deep red, and has a fairer cast of the blue; this is a very beautiful gem. (3.) The sorane or serain garnet, That of a yet brighter red, approaching to the colour of native cuinabus, with a faint blue tinge. (4.) The Almandin, a garnet only a little paler than that called rock ruby. Garnets are divided into the oriental or Asiatic, and occidental, or European kind.

GENEVA or **GIN**, an ordinary malt spirit distilled a second time with the addition of juniper berries. Holland is noted for distilling the finest Geneva, vast quantities of which are annually imported into Great Britain. Our Geneva, or as it is usually denominated *gin*, is an imitation of the Dutch spirit, to which it is greatly inferior in quality, although it is considered when unadulterated with noxious mixtures to be equally as wholesome as the latter.

GENTIAN [Ger. *Ensian*, Fr. *Gentiane*] is a native of the mountainous parts of Germany, and is found in abundance in Burgundy, the Pyrenees and the Alps, whence the roots, the only parts used in medicine, are brought to this country. They have a yellowish brown colour, and a very bitter taste.

GEORGIAN, or *Windward Islands*, sometimes called the *Society Islands*, are a group in the Pacific, under the protection of France, extending between *Lat.* 16° and 18° S. and *Long.* 148° and 155° W. *Area*, about 700 square miles. *Pop.* 25,000. The group is formed by two clusters of islands, one of which lies 75 miles west of the other. The islands number 90. *Commerce.* It is estimated that one-half at least of the entire foreign trade of the Consular district has continued since 1843 to be in the hands of British subjects, while the chief part of the little island trade and the principal plantations in these parts are carried on with British capital. There is, however, but little trade by direct ship between the United Kingdom and the Consular district. The products of the islands are more commonly sent to England either by way of Sydney, New Zealand, Valparaiso, or San Francisco, through which channels, too, goods come in transit from Great Britain to the group much more frequently than direct. Between Tahiti and the British colonies of New South Wales there is some trade direct. *Exports.* Cocoanut oil, pearl shells, &c. *Imports* from the United Kingdom, Cotton cloths, printed and plain muslins and woollen stuffs, ready-made clothing, hardware, glass, earthenware, &c.

STATEMENT OF THE APPROXIMATE AMOUNT OF BRITISH TRADE, DIRECT AND INDIRECT, INWARDS AND OUTWARDS, IN THE CONSULAR DISTRICT OF TAHITI, &C., AT THE PERIODS UNDERMENTIONED.

From the year	To the year	Average Annual Amount. About
1843	1852	£70,000
1853	1862	80,000
1863	1867	120,000
1868	1872	140,000

The foregoing statement shows a considerable advance in British trade—which there very evidently has been of late years—chiefly owing to the impulse given to agriculture, local industries, and commerce by the cultivation in this quarter since 1866 of cotton as an article—now the leading one—of export. The declared value of the exports of cotton during 1871 amounted to nearly £50,000, and the principal plantations are worked on British account. The export trade to Great Britain and British Colonies further comprises among its chief commodities both cocoa-nut oil and the dried kernels of cocoa-nuts, known as "Coprah," as also pearl-shells. The *Imports* from Great Britain and British Colonies, though they have of late years largely increased in quantity, continue to be of much the same description as in former times, the principal articles consisting of cotton cloths, printed and plain muslins and woollen stuffs, ready-made clothing, hardware, glass and earthenware, marine stores, salt provisions, paint and paint oil, soaps, beer, spirits, &c. *Duties.* No duties whatever on exports. The import duties at present amount to 11 per cent. on the service value, and are charged upon all imports, without distinction either of origin or flag. *Property.* Foreigners, including British subjects, enjoy here equally with the French citizens the right of residence, that of acquiring possession and disposing of real and personal property, and that of carrying on commerce by wholesale or by retail, and are not subject in respect of their commerce or industry to any taxes or impost whatever other or greater than those imposed upon French citizens. *Shipping.* The following is a return of the British shipping that arrived at Tahiti in each year from 1843 to 1871:—

Years.	Vessels Entered.	Tons.	Crews.
1843	45	7,652	588
1844	44	5,557	447
1845	46	6,301	485
1846	27	3,633	296
1847	29	3,362	246
1848	10	1,737	106
1849	30	4,190	315
1850	80	14,093	835
1851	60	11,419	670
1852	28	5,124	297
1853	20	4,127	233
1854	27	7,812	369
1855	21	4,914	263
1856	16	2,865	179
1857	11	2,117	125
1858	8	1,411	85
1859	12	2,601	152
1860	7	2,056	85
1861	10	1,673	115
1862	15	2,293	144
1863	14	3,171	151
1864	13	1,948	130
1865	18	4,358	197
1866	47	14,070	559
1867	33	7,613	326
1868	31	4,474	265
1869	29	5,314	269
1870	22	3,760	190
1871	25	4,128	217

No tonnage or light dues are charged; in fact, the only obligation to which ships are subject is for pilotage. The pilotage dues are charged whether ships employ a pilot or not, and are levied at equal rates upon the merchant vessels of all nations alike, with the exception only of certain abatements enjoyed by vessels while employed in the coasting trade.

GERMANY [Ger. *Deutschland*, Fr. *Allemagne*], a large portion of central Europe, comprising 26 states, united as one empire, and represented internationally by the King of Prussia, who bears the title of Emperor of Germany. *States of the Empire.* Kingdoms of Prussia, Bavaria, Wurtemburg, and Saxony; Grand Duchies of Baden, Mecklenburg-Schwerin, Hesse, Oldenburg, Saxe-Weimar, Mecklenburg-Strelitz; Duchies of Brunswick, Saxe-Meiningen, Anhalt, Saxe-Coburg-Gotha, Saxe-Altenburg; Principalities of Waldeck, Lippe-Detmold, Schwarzburg-Rudstadt, Schwarzburg-Sondershausen, Reuss-Schleiz, Schaumburg, Lippe, Reuss-Greiz; Free Towns of Hamburg, Lubeck, Bremen; Reichsgebiet of Alsace-Lorraine. *Area.* 212,091 Eng. sq. miles. *Pop.* 40,111,265. *Productions: Minerals.* Precious stones are comparatively scarce. The N.W. districts supply in great abundance saltpetre, lime, asbestos, slate, rolling-mill sand and pumice-stones; calcedony, basalt, agate, granite, and spring and rock salt. *Agriculture.* The largest grain-fields are in Wurtemburg, the smallest in Mecklenburg. Bavaria, Wurtemburg, Saxe-Altenburg, Michenburg, Holstein, &c., produce a larger quantity of breadstuffs than is required for home consumption, while Saxony and some of the Saxon Duchies are importers of breadstuffs. Hops of an excellent quality are furnished by Brunswick. Beets are used in enormous quantities for the manufacture of beet-sugar, and their cultivation has almost entirely superseded the grain culture in the Prussian provinces of Saxony, Anhalt, Hesse-Darmstadt, and S. Bavaria. Chicory, as a substitute for coffee, is raised in the country between the Elbe and Weser rivers. In garden culture, Wurtemburg, Bavaria, Hesse, and the Saxon Duchies hold the highest rank. The fruit raised on the banks of the Rhine and Neckar, in Saxony and N.W. Bavaria, is of the very best quality to be found anywhere. *Manufactures.* Of all European countries, Germany has the oldest manufactures. As early as the 13th century, Germany was celebrated for its cloth and linen manufactures, its glass wares, carved and chiselled wares. In the following year the silk manufacture was introduced; but it was not until a commercial union of the States (1834) was formed, that great progress was made. While for fifty years it had pre-eminently become an exporter of raw products of the soil, it is now one of the principal exporters of industrial products and importers of raw materials. The ZOLLVEREIN, as constituted in 1834, comprised Russia, Saxony, the Thuringian Duchies, Hesse-Cassel, Hesse-Darmstadt, Bavaria, and Wurtemburg, with a population of 3,000,000 souls. This union opened up a wide field for the increased consumption of German produce; it simplified the land carriage of foreign goods imported by way of Hamburg and the northern ports of Prussia, or by way of the Rhine to Düsseldorf, Cologne, and Manheim; it levied transit duties, at various rates on different frontiers, though seldom any in excess of 1*s.* sterling per centner (110¼ lb.). It substituted for the low finance tariffs of Saxony and Thuringia a Customs Act, imposing heavy protective charges on every sort of manufactured or half-manufactured article. The value of the business done by England with Germany, at the foundation of the Zollverein, was £5,547,000, a sum which rose to £28,062,000 as regards exports, and £15,402,000 as regards imports.

TOTAL EXPORTS FROM GREAT BRITAIN TO THE ZOLLVEREIN, VALUED IN £ STERLING:

1866	£25,103,000
1867	29,865,000
1868	32,306,000
1869	32,068,000
1870	28,062,000

TOTAL IMPORTS INTO GREAT BRITAIN FROM THE ZOLLVEREIN, VALUED IN £ STERLING:

1866	£19,085,000
1867	18,904,000
1868	18,169,000
1869	18,351,000
1870	15,402,000

From 1859 to 1864, the average imports of cotton did not much exceed 1,000,000 centners per annum. From 1865 to 1869, the import rose to an average of nearly 2,000,000 centners. The import of several articles was doubled, trebled, or more than trebled, in five years. We notice particularly cotton goods, bleached linen, silk and half-silks, woollens, bar iron, iron castings, and coals, and yet the time during which this progress was made was remarkable for great wars and continuous enterprise. It was marked by hostilities on a large scale between Austria and Prussia, and by a coolness, which led to hostilities on a still larger scale, between Germany and France. During 1866, the course of trade was greatly interrupted by the partial break-up of the Zollverein system, and by a general uncertainty as to the issues of the war after 1866. In spite of the reorganisation of the Zollverein on a new system (June, 1867), manufacturing activity was kept down by well-founded anxiety as to the preservation of peace. The table on the opposite page shows how important Saxony alone, as one of the union, has become as a market for English yarns. In six years the demand for cotton yarns was doubled, while that for linen yarns increased by a third. The numbers (in cotton) in which most business was done were 60 and 70, doubled; then 80, 100, and 120, doubled; after which came 40 to 50, medium; 60 to 70 mule; and 20 to 30, water. In woollen yarns, the run was principally for 30, single; 30, single wafts; then 28 and 36, single wafts; and 26 to 40, two-folds. The number of cotton spindles in the Zollverein was calculated, in 1870, at 3,000,000; since the annexation of Alsace and Lorraine, at 5,000,000. The number of cotton looms in the Zollverein was calculated, in 1870, at 37,000; since the annexation, at 85,000.

The cotton and woollen stuff trades were marked by curious and unexpected incidents. It was assumed, not only by Manchester men, but by commission agents at Leipsig, that the reduction of duties on shirtings to £1 16*s.* per centner would open an extensive market to British produce. To the surprise of all, the Germans refused to buy British shirtings. They were accustomed to smooth cottons, carefully singed, strongly bleached, and comparatively free from priming; of that class they took habitually, and in excellent quality, from the factories of Ettlingen. They considered British goods of the same kind too full, too woolly, too yellow, and too much primed. The Leipsig merchants suggested that the Manchester manufacturers should study the German market, and the latter in reply said that they could not produce piece goods, more especially shirtings, to suit one particular country. This is one important branch of the cotton trade which prevented Great Britain from gaining any advantage from the introduction of a more liberal tariff. Another particularity may be noticed:—The German customs divide cottons into articles that are clear and not clear. They define clear tissues as stuffs in which the interval between two threads is larger than the thickness of the threads forming the interval. Clear tissues were charged £2 8*s.*; not clear, £4 10*s.* But the finest and dearest lawns are not clear according to the definition, whereas the coarser primed linings are undoubtedly so. In this manner cheap stuffs are burdened with the high duty, and dear ones go in at the low. Where England hitherto had shown her superiority—as in the make of cotton velvets, velveteens, fustians, TABLE SHOWING THE IMPORTS INTO LEIPZIG, DURING THE YEARS 1866 TO 1871, OF ENGLISH GOODS ENTERED FOR CONSUMPTION AND EXPORTATION.

	1866.	1867.	1868.	1869.	1870.	1871.
	Ctrs.	Ctrs.	Ctrs.	Ctrs.	Ctrs.	Ctrs.
Cotton yarn	30,924	39,075	56,919	59,798	53,942	66,938
Cotton goods	4,061	5,077	5,647	5,445	4,370	6,873
Tools of iron and steel (files, hammers, &c.)	1,207	1,291	1,747	2,599	2,537	2,930
Fine iron wares	353	468	500	646	419	466
Needles and steel pens	57	124	81	81	50	82
Glass wares	71	50	96	130	186	223
Fine wood wares	72	89	94	88	109	237
Musical instruments (piano key-boards)	92	126	128	107	142	143
Astronomical, mathematical, and other instruments	24	27	52	52	28	65
Machines—						
(*a*) In most parts wood	555	22	26	294	175	142
(*b*) Ditto cast iron	2,086	4,791	7,236	6,722	4,451	6,855
(*c*) Ditto wrought iron	75	48	275	767	186	214
(*d*) In metal not above named	13	2	15	1	11	10
Rollers for printing stuffs	157	131	248	91	134	169
Carding machinery and cards	18	1	9	22	8	40
Indiarubber wares, plain and unlacquered	42	31	42	79	42	137
Ditto, lacquered, dyed, and painted	181	48	120	129	108	178
Indiarubber tissues	134	243	249	383	421	673
Silk millinery	10	14	9	13	11	4
Half silk ditto	107	127	119	88	63	108
Ready-made apparel of indiarubber (mackintosh)	7	12	27	139	151	63
Men's hats	1	1	2	6	1	5
Apparel, linen	8	5	6	3	..	..
Copper and brass wares, coarse	32	9	14	25	28	105
Ditto, fine	176	199	190	297	237	252
Hardwares and small wares (gold, silver, &c.)	4	..	3	2	..	..
Ditto of base metal or silvered	103	108	140	140	133	131
Leather	252	238	909	1,512	264	1,177
Glove leather and lacquered leather	19	11	59	6	33	40
Coarse shoemaking wares and saddlery	97	100	106	103	149	266
Fine leather wares	11	31	11	65	76	141
Linen yarn	563	397	673	995	1,745	3,436
Ditto thread	1,076	676	717	712	438	80
Grey linen, packing cloth	1,014	1,628	3,131	5,041	5,553	4,894
Linen, bleached	693	991	1,106	1,296	952	1,760
Sailcloth	4	29	22	16	48	2
Paper-hangings	133	111	50	58	44	38
Wares of paper and cardboard	41	35	59	62	68	122
Binders' wares	6	11	5	28	13	35
Silk wares	236	305	294	298	170	223
Half silk wares	361	430	305	183	156	295
Straw bonnets, untrimmed, pieces	506	145	203	352	107	12
Ditto, trimmed	73	307	186	46	125	87
Plain earthenware	16	36	17	36	43	57
Painted ditto	79	65	61	59	32	62
White porcelain	3	8	8	4	6	4
Pattern ditto	36	14	43	13	15	32
Earthenware in conjunction with other materials	52	18	16	39	12	39
Oil-cloth	2,169	3,155	3,611	3,444	3,076	4,487
Woollen yarn	40,552	46,670	57,093	57,612	63,061	64,823
Ditto embroidery and lace	6	5	..	9	3	31
Woollens, printed	1,276	3,687	3,365	2,033	1,094	602
Ditto, plain, unmilled	5,087	5,686	10,099	10,371	9,877	16,367
Carpets	71	341	603	370	287	714
Woollens, not printed, but milled	2,957	3,502	5,016	6,591	4,134	7,781

twills, drills, linings, net and tulle—she kept her ground with Germany. In course of years she greatly extended her market by the cleverness with which she produced light cotton hosing, essentially calculated to neutralise the Zollverein charge for weight. The new tariff, though it still excluded the cheapest woollens, opened an extensive field for the sale of that class of goods which is made at Batley, Dewsbury, Huddersfield, Mirfield, and Leeds. To anyone at all familiar with the trade, such articles as cotton warp, cloth, tricolor, pilot, president, nap, Witney, Devon, Melton, and Tweed, are well known. They are tissues, wholly or partially milled, and as such liable, we should think, to none but the low duty of 30*s*. But difficulties arose about the definition of the word "milled." After some trouble, it was found advisable to adjust the types of different cloths by registering a nomenclature of stuffs, according to the fanciful names imposed on them by the trade. The result was that quantities of cloths which undoubtedly undergo some one of the numerous processes of fulling, were thrown out of the class of milled goods, and subjected to the £3 duty. In spite of these impediments the British trade in woollens increased to a considerable extent. The stuffs produced at the places named have not ceased to enjoy an extensive custom; and they share, with seal-skins and dog-skins on the one hand, and the large class of Bradford stuffs—at the head of which are placed Orleans, alpaca, mohair, lastings—on the other, a large amount of public favour. It has often happened since 1866 that a new stuff, prepared in England, has been bought by Germans from English makers, and imitated so as to oust us from the market. Italian cloth was one of those stuffs. In 1869 the coloured lustres of Bradford were brought out with a perfection and at a price against which the produce of Saxon and Rhenish looms could not contend. To hold her own, Great Britain must continue to improve her machinery and skill in design. The Germans now make their own looms for worsted, tape, and cotton or worsted trimmings; but they still take power-looms and spinning-jennies from English makers: and so long as they have to look abroad for machinery we may be certain that their progress is not on a level with that which is made in England and Scotland. German makers, again, frequently succeed in beating us in their own markets with stuffs of which the original type is English. In many of these cases they only compete by using British yarns; and here again lies one of England's great present advantages. *Linen trade*, the, has undergone a decline in Germany, owing to the short length and want of tenacity of German as compared with English and Irish flax. *Iron trade*, the, has also declined. It has remained profitable to Great Britain; and English exports have continued to increase, in spite of the impulse which the Zollverein produce has not ceased to display. No article has been in such demand in Germany of late years as rails; yet it would be difficult to point to a single instance in which English rails have found their way into the Zollverein. The cause lies in part in this, that the companies and government officials insist upon imposing upon the owners of rolling-mills the form, substance, and purchasing of the article for which they contract. Rails are made to order in Germany under the most rigid conditions; and it is these conditions which English makers will not bind themselves unconditionally to fulfil. But there is no reason why we should look forward to the future of British trade in the Zollverein with any anxiety. The union of the German States into one Empire has intensified, and is still intensifying, the demand for necessaries and luxuries.

GERMAN PORTS. *Hamburg*, one of the Hanse towns, joined to the States of North Germany since July, 1867. It is on the north bank of the Elbe,* 75 miles from the ocean, 60 miles N.E. of Bremen, and 36 miles S.W. of Lubeck. From her situation, Hamburg enjoys the distinction of being the principal city of Germany, if not of the Continent. She has communication by rail with the principal cities of the German States, and by steamship with Heligoland, Hull, London, Newcastle, Liverpool, Leith, Amsterdam, Havre, Christiania, and New York Besides this, upwards of 30 large packet ships sail regularly to Australia, Valparaiso, and San Francisco; five to New York direct, and others to various ports of North and South America. *Trade and Commerce.* Since 1851 the manufacturing industry of the countries whose business is transacted through the district of the British Consulate at Hamburg has been developed to an enormous extent, and has given rise to an extensive and growing demand for coal, iron, cotton, wool, yarns, and raw materials of every description from Great Britain. But not only has she supplied the factories and foundries of Germany with a large portion of their materials; she has also maintained, with great success, the competition with the manufacturers themselves. The growth of the population in wealth and refinement, as well as in numbers, has been steadily followed by a demand for English manufactured goods of all kinds, so that the value of the goods shipped to the port of Hamburg alone amounted in the year 1871 to nearly £25,000,000, or about 10 per cent. of the value of all the exports from Great Britain to foreign countries. The following table shows the total value of goods imported from the United Kingdom and British colonies into the Consular district at Hamburg for the years 1851 to 1871, exclusive of bullion:—

---

* The mouth of the Elbe is encumbered with sandbanks. The channel leading to Cuxhaven is bounded on the N. by the Vogel Sands and North Grounds, and on the S. by the Schaarhorn Sands and Newark Island. On the latter there are two lighthouses and two beacons, and on the Schaarhorn is another beacon

German Ports **German Ports**

Port Entered.	Average of Years 1851—1855.	Average of Years 1856—1860.	Average of Years 1861—1865.	Average of Years 1866—1870.
	£	£	£	£
Hamburg	8,964,899	11,536,808	15,394,225	18,237,698
Harburg	Not obtainable	Not obtainable	Not obtainable	260,983
Lubeck	Ditto	69,917	91,617	57,186
Rostock	36,211	34,080	218,358	127,537
Total	9,001,110	11,640,805	15,704,100	18,683,404

It will be observed that the goods received at the vice-consular ports are very trifling in value, and no returns are available in some cases. The reason for this lies in the fact that Hamburg is by far the most convenient port of discharge, and is connected by railway with all parts of Germany and Austria. Only those goods, therefore, are sent to Harburg, Lubeck, or Rostock which are bulky and low in value. The falling off of the receipts at Lubeck and Rostock is attributable to these ports having been recently brought within the Zollverein frontier. The following table indicates the various classes of goods comprised in the above state:—

Average of Years.	Articles of Food and Consumption.	Fuel and Building Materials.	Raw Materials and Partly Manufactrd. Goods.	Textile Fabrics.	Artistic and Industrial Productions.	Total Average Value.
	£	£	£	£	£	£
1851—1855	583,306	322,683	5,260,821	2,269,712	566,588	9,001,110
1856—1860	740,764	490,224	6,749,116	2,930,521	730,180	11,640,805
1861—1865	917,552	558,276	9,908,988	3,300,736	1,018,548	15,704,100
1866—1870	1,288,433	639,993	10,974,445	4,373,395	1,407,138	18,683,404
1871	1,983,356	1,332,035	14,518,367	5,724,157	2,185,652	25,743,567
Increase above the average of the previous five years	694,923	693,042	3,543,922	1,340,762	778,514	7,060,163

Most of the coal imported is nut coal, the large blocks used in England being unsuitable for stoves, but a large quantity is imported for steam purposes. The weight imported in 1869 was, of coal, 667,498 tons; coke, 22,242 tons; value, £521,160: in 1870, coal, 668,166 tons; coke, 21,308 tons; value, £518,025; in 1871, coal, 1,016,816 tons; coke, 30,702 tons; value, £833,203. *Indirect British Trade.* In addition to the raw materials and manufactured goods of every description imported from the United Kingdom, a large and increasing trade is carried on here by the agents of English mercantile houses in obtaining orders for manufactured goods to be shipped from the United Kingdom to South America, China, and other foreign ports, for German account. It is estimated that the transactions in this line, comprising cotton, woollen, and linen manufactures, amount to not less than £5,000,000 for 1872. This branch of trade has increased very considerably during the past few years, it being estimated that the sales did not exceed £2,000,000 to £3,000,000 five years ago. *Imports.* Here is given the rate of duty imposed upon the principal manufactured goods imported, in English weight and money. The duties being levied on the weight, and not on the value of the goods, has a very restrictive effect upon the importation of heavy woollen fabrics, such as carpets, blankets, and heavy clothing materials:—

		£	s.	d.
Cotton yarn, raw	per cwt.	0	6	0
Ditto, bleached or dyed	,,	0	12	0
Ditto, two or more threads	,,	0	18	0
Cotton manufactures—				
Stout goods, raw or bleached	,,	1	10	0
Fine goods	,,	2	8	0
Cotton, jaconet, muslin, tulle, gauze, embroidery, &c.	,,	3	18	0
Linen yarn, bleached or dyed	,,	0	5	0
Ditto thread of all kinds	,,	0	12	0
Ditto cloth	,,	0	12	0
Do., dyed, bleached, or pressed	,,	1	10	0
Ditto hosiery, tape, gauze	,,	1	10	0
Ditto lace	,,	6	0	0
Silk piece goods	,,	6	0	0
Ditto mixed with cotton, linen, wool, &c.	,,	4	10	0
Woollen goods, pure, or mixed with cotton, linen, &c.	,,	4	10	0
Carpets	,,	1	10	0

The only improvements that have been effected in this direction since 1870 are the reduction of the duty on pig iron from 6*d.* to 3*d.*, and on rice from 3*s.* to 1*s.* 6*d.* per cwt.; improvements that were counterbalanced, however, by the increase of the duty on coffee from 15*s.* to 17*s.* 6*d.* per cwt. *Shipping.* The following indicates the increase within the last twenty years of the shipping concerned in the trade between the United Kingdom and the principal ports within the Consular district:—

Port entered.	Average of Years 1851—55.		Average of Years 1856—60.		Average of Years 1861—65.		Average of Years 1866—70.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Hamburg	1,908	496,233	2,249	724,394	2,361	858,590	2,301	1,225,558
Altona	519	70,545	392	68,289	278	59,617	140	32,955
Harburg	391	39,108	652	67,912	437	51,400	230	28,219
Lubeck	123	19,582	148	25,294	159	32,904	132	31,226
Rostock	39	4,419	39	4,960	129	15,469	66	8,838
Total	2,980	629,887	3,480	890,849	3,364	1,017,980	2,869	1,326,796

Lubeck, one of the four free cities of Germany, on a ridge between the Rivers Trave and Wakcuitz, 29 miles N.E. Hamburg and 145 N.W. Berlin. *Trade and Commerce.* The chief imports are cottons, silk goods, hardware, and other manufactures, one-third of which come by land and river from Hamburg; the remainder by sea, or in large vessels, which formerly had to discharge at Travemunde, being, through recent enlargement of the port, now able to come to the city. The exports consist mainly of corn, cattle, wool, timber, iron, and fish. The principal manufactures are tobacco, soap, paper, playing-cards, linen and cotton goods, and iron. The sales of products and manufactures from Great Britain from this city to the northern countries, with the exception of English sheet-iron, have increased. The depression in the demand for English sheet iron is caused by the high duty imposed on its importation. In respect of the commerce of this city with neighbouring markets, the wholesale export business has considerably increased; on the contrary, the retail business has by no means answered the high expectations made thereof. *Shipping.* The number of vessels arriving here under the British flag amounted, in 1869, to 12 ships of about 2,435 tons, against 19 ships of 3,704 tons in 1868, and 14 ships of about 3,797 tons in 1867. *Frankfort* is situated in a fertile valley on the right bank of the River Main. The principal business of this city is banking. There are about twenty first-class banking houses, foremost among which are those of Rothschild, Bethmann, Grunelius, Gontard, and Heyder. The magnitude of this business is due partly to the great wealth of the city, and partly to its geographical position, which makes it a convenient medium of exchange between Vienna and Paris, Trieste and Hamburg, and Vienna and Berlin. *Industries.* Carpets, table-covers, playing-cards, oilcloth, tobacco, and snuff. *Dantzig* is an important commercial city on the left bank of the Vistula, about 3½ miles from its mouth. This port ranks next in importance to Petersburg and Stettin, in the west of Europe. The great staples are Polish and Russian grain, especially wheat and wood, leather, potash, wool, tallow, pitch, hemp, flax, butter, furs, bees, and liquors. *Imports.* The quantity of coals imported during 1868 amounted to 3,383,790 centals, or 56,396 tons, viz., 195 cargoes, with 35,896 tons, from English ports; 197 cargoes, with 20,500 lasts, from Scotch ports. Of this amount, 37,254 were forwarded to Poland, and the remainder was for local consumption. *Salt.* The Government monopoly in salt ceased on the 31st December, 1867. It is too early yet to see the full results of this measure. The Government stores of salt have been disposed of. Total value of imports for 1868, £4,510,500; total value of exports for the same year, £4,020,900. *Shipping, British.* 226 vessels arrived with cargoes aggregating 29,500 tons. *Stettin* is on the left bank of the Oder, at its mouth, in the Stettiner-haff, 79 miles N.N.E. of Berlin. Besides being the principal emporium for some very flourishing countries, Stettin is also the centre of an extensive system of railways communicating with Berlin and the west of Germany. *Imports.* Coal, iron in pig, bar, wrought rails, and coarse iron goods, soda and potash, oils, cottons, yarns, rice, coffee, spices, herrings, &c. *Exports.* Zinc, seeds, rape, oil, flour, spirits, corn—wheat, rye, barley, oats. The value of imports and exports averages upwards of £6,300,000 annually. The trade of this port is essentially a commission trade; and as the transit trade to and from Austria is very extensive, the opening of a new line of railway, by which goods could be forwarded from England to Austria at a lower rate, *viâ* Hamburg or Bremen than *viâ* Stettin, would, no doubt, be very injurious to this port, upwards of 60 per cent. of its entire trade being with Great Britain. *Bremen, see* BREMEN. *Money, Weights, and Measures. Hamburg.* The mark current=1*s.* 3*d.*, mark banco=1*s.* 6*d.* The centner=110¼ lb. avoir. Commercial last, about 3 tons; last of coals, about 2 tons; of grain=11 imp. quarters. Stechkanne, 4⅛ gall. Orchoft=48 gall. Viertel=1½ gall. *Lubeck.* Mark current same as Hamburg. Shipping last=2 tons. Pfund=1·07 avoir. Tonne of linseed, 3½ bushel; of coals=30 avoir. Viertel=1½ gall. *German Union.* The thaler=30 silver groschen; average rate of exchange, 3*s.* The centner, 110¼ avoir. Ship last of timber=about 80 cubit feet. Scheffel=1½ imp. bushel. Klafter=6 feet.

GIMP, a kind of silk twist, lace, or edging, used in trimming garments, &c., chiefly manufactured at Manchester.

GINGER [Ger. *Ingwer*, Fr. *Gingembre*] is a knotty, flattish root of a fibrous substance, of a pale or yellowish colour, covered with a thin, dusky pellicle, which is usually taken off while it is fresh, and before it is brought to Europe. The plant which produces ginger does not appear far above ground. It puts forth long green leaves, somewhat similar to those of the rose, and its flowers are red, slightly tinged with green. Good ginger ought to be new, dry, well filled, and difficult to be broken, of a reddish-grey surface, resinous within, and of a hot, pungent taste. The ginger imported comes from the East Indies, also from Jamaica. There are two sorts—white and black—of which the former is the more highly esteemed.

GINSENG or GINSANG [Ger. *Kraftwurzel*, *Ginseng*, Fr. and It. *Ginseng*] is the root of a plant found in Chinese Tartary and in several parts of North America. The dried root, as imported hither, is about the thickness of the little finger, about three or four inches long, frequently forked, transversely wrinkled, of a horny texture, and of a yellowish white colour, both inside and outside. It was formerly thought to be a valuable medicine; but this belief has well-nigh been exploded. The Chinese, however, ascribe extraordinary virtues to it, and are its chief buyers.

GLASS [Ger. *Glas*, Fr. *Vitre*, *verre*], a transparent, brittle, factitious body produced by the action of fire upon a fixed salt and sand or stone that readily melts. There are different kinds of glass manufactured for various purposes. The principal of these are flint glass, crown glass, and bottle glass. The first is the densest, most transparent, and most beautiful glass, and is often called crystal. The second is called window glass; and the third, the coarsest of all, is too well known to describe.

GLOVES [Ger. *Handschuhe*, Fr. *Gants*], in commerce, are distinguished as wash or tan leather, silk, thread, worsted, &c. Leathern gloves are made of chamois, kid, lamb, doe, elk, buff, &c. The leather of gloves is not, properly speaking, tanned, but cured with alum, which renders it soft and pliable. The French have long been famous for the excellence of their gloves. Large quantities of cotton gloves are manufactured at Nottingham and Leicester, and woollen gloves are made in the north of England, Wales, and Scotland.

GLUE [Ger. *Leim*, Fr. *Colle*]. This well-known substance has been long manufactured in most countries, and employed to cement pieces of wood together. It is extracted by boiling water from animal substances, and differs in its qualities according to the substances employed. Bones, muscles, tendons, ligaments, membranes, and skins, all yield it. English glue is considered as the best.

GOLD, the most beautiful and valuable of the metals. The limits of the ductility and malleability of gold have never yet been fully ascertained, but its tenacity is known to exceed that of any other metal. By the weight and measure of the best wrought gold leaf, it is found that one grain is made to cover 56¾ square inches; and from the specific gravity of the metal, together with this admeasurement, it follows that the *leaf itself* is 1-282,000th part of an inch thick. It is sometimes found in separate lumps or visible grains among the sand of rivers in many parts of the world, but the bulk of the gold that has been found has been taken from the *débris* of quartz rocks. It occurs in more or less abundance in all parts of the world, but since the discovery of the American and Australian mines by far the greater part of the supplies of gold have been derived from them. In 1801 the quantity of pure gold produced in America was 46,331 lb.; in European and Northern Asia (exclusive of China and Japan), 4,916 lb.; total produce, 51,247 lb.=55,910 lb. British standard gold=£2,612,200. In 1846 the quantity of pure gold produced in America was 25,503 lb.; in Europe, Africa, and Asia (exclusive of China and Japan), 89,171 lb.; total produce, 114,674 lb.=125,108 lb. British standard gold=£5,846,772. In 1850 the quantity of pure gold produced in America was 261,731 lb.; in Europe, Africa, and Asia (exclusive of China and Japan), 104,219 lb.; total produce, 365,950 lb.=399,247 lb. British standard gold=£18,654,322. It has been estimated by an American well acquainted with the subject that the production of gold in 1868 throughout the civilized world amounted to 150,000,000 dollars (£30,000,000); the United States producing 60,000,000 dollars, Mexico and South America 5,000,000 dollars, Australia 60,000,000 dollars, British America 5,000,000 dollars, Siberia 15,000,000 dollars, elsewhere 5,000,000 dollars. An Australian authority, however, estimates the annual supply of gold throughout the world at not more than £20,000,000. This amount, it seems clear, will be absorbed by the German Mint, even at its minimum rate of coinage, *for some time to come*, and this is exclusive of the demand for manufacturing purposes; so that, however great the out-turn at the Australian mines may be, the possibility of a fall in the value of gold is what no one fears. The gold coinage of Great Britain is estimated to be somewhere about £100,000,000, and the German Government will probably set afloat the same amount by coining £20,000,000 for five years successively. Independent, however, of the German demands, there is an exclusive and growing demand throughout the East, which will keep the miners and mints at work for many years. During the 12 years from 1861 to 1872 inclusive, there has been an export of gold from Great Britain to Egypt and the East of over £46,000,000, or an average of very nearly £4,000,000 a year; and this is exclusive of the gold remitted from Australia direct to the East. That process is still going on, and with the expansion of Eastern commerce it will continue indefinitely. It has been said that the sovereign has already lost some of its value, because it will not go so far as it did formerly. But the greater dearness of things is rather due to the increase of the world's wealth than to the increase in the stock of bullion. The gold discoveries have had an immense influence in stimulating industry, and in so doing have increased the real wealth of the world; and this indirect result of the labours of gold miners is probably far greater than their direct contribution to the wealth of the world.

GOLD-BEATING. Gold-beaters first melt a quantity of pure gold and form it into an ingot; this they reduce by forging it into a plate about the thickness of a sheet of paper; which done, they cut the plate into little pieces about an inch square, and lay them in the first or smallest mould to begin to stretch them; after being hammered here awhile with the smallest hammer, they cut each of them into four, and put them into the second mould to be extended further. Upon taking them out they cut them again into four, and put them into the third mould, out of which they are taken, divided into four as before, and laid in the last or finishing mould, when they are beaten to the degree of thinness required. The leaves thus finished, they take them out of the mould, and dispose them in little paper books, prepared with a little red hole for the gold to stick to. Each book ordinarily contains 25 gold leaves There are two sizes of these books; 25 leaves of the smallest only weigh 5 or 6 grains, and the same number of the largest 9 or 10 grains.

GRAPES [Ger. *Trauben*, Fr. *Raisins*], a well-known fruit produced from the vine, whose colour when ripe is either red or green. France, Spain, Portugal, and Italy, as well as some parts of Germany, produce grapes capable of yielding wines of various qualities and flavour. Vast quantites of green grapes are imported from Malaga and some other parts of Spain. The grapes grown in the United Kingdom are much smaller and by no means so luscious as those of foreign countries.

GRATINGS, in a ship, a kind of lattice-work formed of ledges and battens, the square holes of which, being three or four inches wide, are used to give air between decks.

GREAT-CIRCLE SAILING, the manner of conducting a ship in or rather pretty near the arch of a great circle that passes through the zenith of the two places, viz., whence she came and to which she is bound.

GREECE, the kingdom of, is situated between *lat.* 36° 16′ and 39° 34′ N., and *long.* 20° 43′ and 26° 28′ E. *Pop.* 1,457,894. The populated area is 19,941 English square miles. The kingdom is divided into 13 nomos or nomarchies, and subdivided into 59 eparchies. The 13 nomarchies are *Northern* Attica and Bœotia, Phocis and Phillistis, Acarnia and Ætolia, *Peloponnesus*, Argolis and Corinth, Achaia and Elis, Arcadia, Messina, Laconia. *Islands*, Eubœa and Sporades, Cyclades, Corfu, Zante, Cephalonia. *Cap.* Athens. *Pop.* 46,000. *Agriculture*. The products are similar to those of S. Italy, but the country is more pastoral than agricultural. The olive and currant grape are cultivated extensively. Wheat is cultivated with great success as regards quality in the Morea. Hellas and Bœotia possess fine corn districts, but the production of cereals is so far below the consumption that large quantities have to be imported. *Manufactures*. A few cotton, silk, and woollen stuffs are made in the larger towns, and carpets and sail-cloth, straw hats, &c., in Andros and Siphnos. The articles made, however, are chiefly for domestic use. *Commerce*. The exports consist of silk, figs, wool, olive oil, valonica, sponge, wax, and tobacco. Imports—cotton and woollen goods, corn, &c. The value of the former averages £2,500,000, and that of the latter £2,000,000. About one-half of the imports comes from, and three-fifths in value of the exports go to, the United Kingdom.

Years.	Exports from Greece to Gt Britain.	Imports of British Home Produce into Greece.
1866	£ 879,598	£851,873
1867	1,246,683	949,124
1868	1,147,581	976,867
1869	1,526,069	974,679
1870	1,279,325	942,618

Ports, principal, are Missolonghi and Galaxidi on the west coast of Hellas; Piræus on the east coast; Nauplia, Patras, and Corinth in the Morea; and Syra Hydra and Spezzia in the islands of those names. *Money*. The drachma is divided into 100 lepta. Average rate of exchange, 8½ drachmas =£1 sterling. *Weights and Measures*. The oke, 2·80th avoir., cantas, 123·20 avoir.; livre, 1·05 avoir.; baril, wine, 16·33 imp. gall.; kilo, 0·114 imp. quartern; pike=¾ English yard; stremnea=¼ of an acre.

GROCERY [Ger. *Spezereien*, *Materialwaaren*, Du. *Specerijen*, Da. *Specierie*, *Krydderie*, Sw. *Speceris*, *Kryddor*, Fr. *Epiceries*, *Epices*, It. *Spezi*, *Spezierie*, Sp. *Especias*, *Especerias*, Port. *Especies*, *Especiaria*, Rus. *Pranue Korenja*, Pol. *Korzenne*], consists of those kinds of goods usually sold by grocers.

GROGRAM [Ger. *Grobgrun*, Du. *Grofgrein*, *Grein*, Da. and Sw. *Grofgron*, F. *Gros-grain*, It. *Grossograna*, *Grograno*, Sp. *Gorgoran*, Port. *Grossagrana*, *Gorgoran*], a kind of stuff made of silk and mohair, something coarser and thicker than taffety.

GROSS signifies the quantity of twelve dozen of anything.

GROSS WEIGHT, the whole weight of merchandize, with the dust and dross; as also the bag, cask, chest, &c., wherein goods are contained. An allowance is usually made out of the gross-weight for tare and tret, &c.

Gum [Ger. *Gummi*, Fr. *Gomme*, It. *Gomma*], a vegetable juice, or thick, transparent, tasteless fluid, which sometimes exudes from certain species of trees. It is very adhesive, and gradually hardens, without losing its transparency, but easily softens again when moistened with water. The gum most commonly used is that which is procured from different species of the acacia in Egypt, Arabia, &c. It is known by the name of Gum Arabic. Gum likewise exudes abundantly from the common wild cherry-tree of this country. It is usually obtained in small pieces, like tears, moderately hard, and somewhat brittle while cold, so that it can be reduced by pounding to a fine powder. When pure, it is colourless; but it has usually a yellowish tinge, and is not destitute of lustre. Gums, in general, are more viscid and less friable than resins, and are dissolvable in any aqueous menstruum; whereas resins are more sulphureous, and require a spirituous or oily one. The most valuable are gum arabic, gum senegal, gum dragon, adragant or tragacanth, &c.

H

Hair [*human hair*—Ger. *Haar*, *Menschenhaar*, Fr. *Cheveux*; *hair of beasts*—Ger. *Haar*, *Kuhaare*, Fr. *Poil*], a sort of tegument for the greatest part of animals. It is a considerable part of commerce. The hair-dealers import human hair, goats'-hair, horse-hair, &c. That of the growth of the northern countries is much preferred to that of the more southern ones. Hair should be well fed, neither too coarse nor too fine; the coarseness rendering it less susceptible of an artificial curl, and disposing it rather to frizzle; and the fineness making its curl of too short a duration. Vast quantities of the hair of goats, &c., are consumed in the manufacture of hats and various other articles.

Hair's-breadth, a measure of length, being the 48th part of an inch.

Hammer [Ger. *Hammer*, Fr. *Marteau*, Sp. *Martillo*, It. *Martillo*], a tool used by mechanics, consisting of an iron head fixed crosswise upon a handle of wood. There are several sorts of hammers used by blacksmiths and others, viz., the hand-hammer, which may be wielded or governed with one hand at the anvil; the up-hand sledge, which is held by both hands at the furthest end of the handle, and being swung at arm's-length of the head, is made to fall upon the work with as heavy a blow as possible. There is also another hammer used by smiths, called a rivetting-hammer, which is the smallest of all, and seldom used in the forge, except for small work. For the manufacture of machinery and heavy guns, the steam hammer is used. The largest of this kind is the 30-ton Nasmyth steam hammer, which, with a full jet of steam, is capable of striking a blow equal to the weight of 800 tons. The foundations for the anvil-block are of the most solid description, consisting of immense blocks of iron and oak baulks, laid alternately, and weighing about 650 tons. This hammer is twice as powerful as any other in the Royal Arsenal, the 12-ton hammer having a falling mass of about 15 tons.

Hams [Ger. *Schinken*, Du. *Hammen*, Fr. *Jambons*, It. *Prosciutti*], the thighs of the hog, salted, smoked, and dried. Yorkshire, Hampshire, Wiltshire, and Cumberland are the counties of England noted for producing fine hams. The hams of Portugal and Westphalia are highly esteemed, on account of their exquisite flavour.

Hand's-breadth, a measure of three inches.

Hat [*Hats*, Ger. *Hüte*, Du. *Hooden*, Da. *Hatte*, Sw. *Hattar*, Fr. *Chapeau*, It. *Capelli*, Sp. *Sombreros*], a well known covering for the head, with a brim which distinguishes it from a cap or a bonnet. Great quantities are made in the neighbourhood of Leeds and Manchester. The finest kinds of straw and chip hats are those imported from Leghorn, though it is well known that the greater number of these articles, sold in London and other parts of the kingdom as Italian hats, are made in the United Kingdom.

Hartshorn [Ger. *Hirschhorn*, Fr. *Corne de cerf*] is the entire horns of the male deer, as separated from the head, without further preparation. The chemical analysis of hartshorn is sufficiently known; it yields a water highly impregnated with a fetid oil and volatile salt, by the common distillation in a retort on an open fire. The remainder in the bottom of the retort, after the distillation is finished, is black; but in calcining it in an open fire, it becomes white and friable, and is sold in the shops under the name of burnt hartshorn.

Hardware [Ger. *Kurzewaaren*, Du. *Yzerkramery*, Da. *Isenkramvarer*, Sw. *Järnkram*, Fr. *Clinquaillerie*, *Quincaillerie*, It. *Chincaglie*, Sp. *Quinquilleria*, Port. *Quincalbaria*, Rus. *Mjelotsebnue towarü*] includes, in few words, every kind of goods manufactured from metals, and thus comprises iron, brazen, steel, and copper articles of all descriptions. Birmingham and Sheffield are the principal seats of the British hardware manufactures, and from these towns immense quantities of knives, razors, scissors, gilt and plated ware, firearms, &c., &c., are exported to most parts of the Continent of Europe, and iron utensils of various kinds to our colonies in the West Indies, to Africa, and the continent of America.

Hares'-wool, or the fur of the quadruped called the hare, is much used by hatters, who employ it in the formation of the bodies of hats. Abundance of hares'-wool is brought from Lincolnshire, Staffordshire, Scotland, Wales, and Ireland. The colour of the wool furnished by these parts of the British dominions is generally dark brown, and, if good, silvery at the bottom, near the pelt; but from the northern parts of Europe, Asia, and America, we not unfrequently obtain black and white hares'-wool, which are in no great esteem, and sell at very low prices.

HARPING-IRON, or HARPOON, HARPOONS [Ger. *Harpunen*, Du. *Harpoenen*, Da. *Harpune*, Sw. *Harpun*, Fr. *Harpons*, It. *Ramponi*, Sp. *Arpones*, Port. *Harpeos*, Rus. *Ostrogi*], a large spear or javelin, made of forged iron, and five or six feet long; it is fastened to a line, and is used in the whale fishery.

HARPINGS, in a ship, properly denote her breadth at the bow. Some also give the same name to the ends of the bends that are fastened into the stern.

HARPOON-GUN, a sort of fire-arm for discharging harpoons at whales, and thereby striking them with greater certainty, killing them more expeditiously than when harpoons are thrown by the hand.

HATCHEL, HACKLE, HECKLE, or HITCHEL [*Hatchels*, Ger. *Hecheln*, Du. *Hekels*, Da. *Hegler*, Sw. *Haklor*, Fr. *Serans*, It. *Pettini*, Sp. *Rastrillos*, *Restellos*, Rus. *Tschesalki*, Pol. *Ochlicy*], a tool with which flax and hemp are combed into fine hairs. It consists of long iron pins, or teeth, regularly set in a piece of board. There are several sorts of hatchels, each finer than the other, with which flax and hemp are prepared for spinning.

HATCHES, in a ship, a kind of trap-door between the main-mast and foremast, through which all goods of bulk are let down into the hold.

HATCHWAY, the way or passage over the ship's hatches.

HAWKERS, or PEDLARS, are retail dealers, who travel from street to street selling small wares and other articles. By the Act passed in 1872, which abolished licences, it is provided that no person shall act as a pedlar without such certificate as the Act requires, or in any district where he is not authorized by his certificate so to act, such certificates to be issued by the chief officer of police of the police district in which the applicant lives, on such officer being satisfied that the applicant is a person of good character. The fee for this certificate must not exceed *6d.*, and it remains in force for a year, and no longer, when it must be renewed.

HAWSER, on board ship, a large rope, or a kind of small cable, serving various uses—as to fasten the main and fore shrouds, to warp a ship as she lies at anchor, and wind her up by a capstern, &c.

HAWSES are two large holes under the bow, through which the cable runs when the ship lies at anchor. Thus, the hawse-pieces are the large pieces of timber in which these holes are made. Hawse-bags are bags of canvas, made tapering and stuffed full of oakum, which are generally allowed small ships, to prevent the sea from washing in at the hawse-holes. There are also some terms in the sea-language that have an immediate relation to the hawser. Thus, "a bold hawse" is when the holes are high above the water. "Fresh the hawse, or veer out more cable," is used when part of the cable that lies in the hawse is fretted or chafed, and it is ordered that more cable may be veered out, so that another part of it may rest in the hawses. "Fresh the hawse"—that is, lay new pieces upon the cable in the hawses, to preserve it from fretting. "Burning in the hawse" is when the cables endure a violent stress. "Clearing the hawses" is disentangling two cables that come through different hawses. "To ride hawse-full" is when, in stress of weather, the ship falls with her head deep in the sea, so that the water runs in at the hawses.

HAYTI, a negro republic, occupies the W. portion of the island of the same name in the W. Indies, and is divided from the Dominican republic on the E. by an irregular line drawn from the mouth of the river Anses-a-Pitre, or Pedernales, on the S. coast, to that of the river Massacre, which flows into the Bay of Manzanilla on the N. coast. *Pop.* about 560,000. *Chief Towns*, Port-au-Prince, capital, Haitien, Jacmel, Cayes, Gonaives, Jeremie, Miragvane, Aquiri. *Trade*. English exports to Hayti consist of small quantities of every article manufactured in England, though cotton goods furnish the bulk of the business done. However, considerable quantities of hardware have lately been imported, and if the fashion of roofing the houses with galvanized iron continues to spread, a very great addition will accrue to English trade. Frequent attempts have been made to introduce French cotton goods, but they were found almost unsaleable, and now the superior cheapness of English merchandize has created almost a monopoly of this market. According to the returns of the Haytian Custom House, the imports from England amounted to £503,630 in 1863; to £626,624 in 1864. For 1865–66 there are no figures. In 1867–68–69, the general trade was very low, the imports having fallen to £200,000, but on the termination of the civil war very large importations took place, England sending in £780,000 in 1870. A reaction took place in 1871, and the English imports fell to £510,000—50 per cent. of the whole trade of the country. The *exports* from Hayti are coffee, cotton, cocoa, logwood, and mahogany. The Haytian coffee, though of excellent quality and flavour, is too often sent away in a very dirty condition, which has created a prejudice against it. Sugar might become a valuable article of export, as no country produces the cane with greater perfection, but the proprietors prefer to distil an inferior rum, which sells in the country. With more capital also, more attention could be paid to the cultivation of the coffee and cocoa plants, which are now greatly neglected. Capital is also wanted to develop the mahogany trade. Of the latter large forests exist in the interior, ready to furnish ample supplies to any manufacture of the dye that might be created in the republic. *Shipping.* The shipping returns show how much the English flag is employed in the trade of Hayti. In 1870 this country loaded 244 English sailing ships, and 89 large steamers called in for cargo, and the Royal Mail steamers visited the port of Jacmel 48 times during the year. In 1871, 273 British sailing vessels paid duties; 70 steamers came besides the regular visits of the Royal Mail line. This year a very active trade has been carried on, particularly by the Liverpool steamers. The principal maritime countries employed the following ships during the year 1871:—

Great Britain..	273 sailing ships	of	44,245 tons.
France........	111	,,	34,119 ,,
United States..	157	,,	24,607 ,,

Hazel-Nuts, the fruits of the hazel or common nut-tree. The kernels of the fruit have a mild farinaceous oily taste, agreeable to most palates. The oil expressed from them is little inferior to the oil of almonds. The trees that produce these nuts are all of the large shrub kind, hardy and deciduous, and have several varieties valuable for their nuts. They will prosper in almost any situation, and turn to good account, when growing in coppices, to cut as underwood, and as poles in various uses, as hoops, spars, hurdles, handles to husbandry implements, walking-sticks, fishing-rods, &c., for which purpose they may be cut every fifth, seventh, or eighth year, according to the purposes for which they are designed.

Head-Land, a promontory or cape.

Head-Lines, in a ship, those ropes of all sails which are next to the yard, and by which the sails are made fast to the yard.

Head-Matter, the brains and blubber of the head of the South Sea spermaceti whale. This head-matter is packed in casks, and spermaceti prepared from it.

Head-Sea, is when a great wave or billow of the sea comes right ahead of the ship, as she is in her course.

Head-Sails, in a ship, those which belong to the foremast and bowsprit; for it is by these that the head of the ship is governed, and made to fall off and keep out of the wind; and these in quarter winds are the chief drawing sails.

Head *of a ship*, or other vessel, is the prow, or that part which goes foremost.

Heel, in the sea language. If a ship leans on one side, whether she is aground or afloat, then it is said she heels a-starboard, or a-port; or that she heels offwards, or to the shore, *i.e.*, inclines more to one side than to another.

Heliotrope, a precious stone of a green colour, streaked with red veins. Pliny says it is thus called because when cast into a vessel of water, the sun's rays falling on it seem to be of a blood colour, and that when out of the water it gives a faint reflection of the figure of the sea. This stone is also called Oriental jaspar, on account of its ruddy spots. It is found in the East Indies, Africa, and in some parts of Germany.

Helm *of a ship* is a piece of timber fastened into the rudder, which comes forward into the steerage, or place where the person at the helm steers the ship, by holding the whipstaff in his hand, which is joined to the helm. Steering-wheels are now more generally used. There are several terms in the language relating to the helm, as, "bear up the helm;" that is, let the ship go more large before the wind: "helm a mid-ship," or "right the helm;" that is, keep it even with the middle of the ship: "port the helm;" put it over to the left side of the ship: "starboard the helm;" put it on the right side of the ship.

Hemp [Du. *Hennip*, Ger. *Hanf*, Fr. *Chanvre*, It. *Canape*, Sp. *Canamo*, Rus. *Konapll*, *Konopel*, Du. *Hamp*], from which sailcloth, sacks, coarse towels and table-cloths, cordage, and so forth, are made, is the fibre of an annual plant grown extensively in Russia and Poland, and to some extent, in Italy and the Philippine Islands. Although a native of the East, it is hardy, and capable of adapting itself to diversities of climate if, when young, preserved from the effects of frost. In cultivation, a moist alluvial soil, enriched by manure, produces the longest fibre which, in other places, would be short and scrubby, because, unless the plant grows rapidly, the crop is almost worthless. English hemp is the strongest grown; but, on account of its cultivation being unprofitable, very little is produced outside a few districts in Suffolk and Lincolnshire. The male and female flowers of this plant are separate, so that when the pulling season comes on there are two harvests, one from the male plant in August, and the other from the female a month afterwards. The seed requires to be sown thickly, and the crop pulled by hand soon after flowering to secure anything like a fine fibre. That should be fine, strong, thin, and long, of a uniform colour, and free from spills. After pulling, it is steeped in water until the wood still clinging to the fibre is rotted away, when it is dried, bruised, and scutched, and made up into bundles for sale. In Russia the cultivation of hemp exceeds in extent more than double that of all the other countries producing this fibre combined, and it is regarded there as a highly important article of export. Great care has to be taken in the shipment at St. Petersburg, for both water and damp make it unserviceable. In the Dundee market the following prices may be taken as an estimate of what the various qualities realize:—

St. Petersburg,	clean	£38 to £40	per ton.
,,	half-clean	32 to 35	,,
,,	Codilla ..	19 to 20	,,
Riga,	Rhine ..	£40 0	,,
,,	Outshot .	38 10	,,
,,	Pass	36 0 to £36 10	,,
,,	Codilla ..	19 10 to 20 10	,,

Hepatic Aloes, the inspissated juice of the common aloe, a native of Barbadoes and other West India islands. The smell is stronger and more disagreeable than the soccotrine aloes; the taste is uncommonly bitter and nauseous. The best come from the island of Barbadoes, in large gourd shells; an inferior sort, which is generally soft and clammy, is imported in casks.

HIDE OF LAND, such a quantity of land as may be ploughed with one plough within the compass of a year, or so much as would maintain a family. Some call it 60, some 80, and others 100 acres.

HIDES [Ger. *Haute*, Fr. *Peaux*] signify generally the skins of beasts, but the term is more particularly applied to those of large cattle, such as bullocks, cows, &c. Hides are either raw or green, that is, the same as when taken from the carcase, or salted and seasoned, in which case they are dressed with salt, alum, and saltpetre, to prevent them from putrifying, or they are cured or tanned. The hides of South America are in the highest repute, and vast quantities of them are annually imported into Great Britain. Ireland also supplies ox, cow, and horse hides of a very excellent quality. They are mostly imported in the hair. When sent to foreign countries they are usually salted.

HINGES [Ger. *Haspen*, *Thurangeln*, Fr. *Gonds*] are joints made of brass, iron, &c., on which gates, doors, lids, and covers of boxes, trunks, &c., turn. They are principally manufactured in the neighbourhood of Birmingham and Wolverhampton, and of all descriptions.

HOLLAND, a fine close kind of linen cloth, so called from its being first manufactured in Holland; but this kind of linen is now made also in Ireland in greater perfection than in any other part of the world.

HONEY [Ger. *Honig*, Du. *Honig*, *Honing*, Fr. *Miel*, It. *Mele*, Sp. *Miel*], a saccharine substance prepared by bees. It has a white and yellowish colour, a soft and grained consistence, a saccharine and aromatic smell. By distillation it affords an acid phlegm and an oil, and its coal is light and spongy like that of the mucilage of plants. Nitric acid extracts from it oxalic acid precisely as it does from sugar. It is very soluble in water, with which it forms a syrup, and, like sugar, passes to the vinous fermentation. There are three distinctions of honey, according to its purity, fluidity, and the manner in which it has been procured from the honeycombs. The first and finest kind is virgin honey, or the first produce of a swarm, obtained from the combs without pressing; these being only set to drain, in order to its running out. The second kind is that known by the name of white honey, being thicker than the former, and often, indeed, almost solid. It is procured by pressing the combs, but without the assistance of heat. The third and worst kind, is the common yellow honey, obtained from the combs first heated over the fire, and then pressed. It is frequently adulterated with flour, sugar, &c.; the best way, therefore, of buying it is in the comb.

Streams"), a small island on the coast of China, near the mouth of the Canton River, 40 miles E. of Macao, *Lat.* 22° 16′ N., and *Long.* 114° 22′ E. *Pop.* 115,000. A British colony. There are good roadsteads at Hong-Kong Bay, and Victoria has bays which are free from typhoons, but violent winds are frequent. The trade of the colony is exclusively one of transhipment, the merchandize from Europe being distributed from this centre to the ports of China and Japan. The port being entirely free from every impost, no export or import duties are leviable; and there being no charges, even for lights or tonnage, direct information as to the value of the trade cannot be furnished. The annual sales, however, amount to upwards of £8,000,000, consisting principally of cotton, yarn, grey shirtings, T-cloths, long ells, Spanish stripes, lastings, coals, rice, iron, lead, hardware, &c. *Banks.* Chartered Bank o India, Australia, and China; the Oriental Bank; the Chartered Mercantile Bank; and the Comptoir de Paris.

HOOFS OF ANIMALS. The hoofs of animals are composed of a substance nearly of the same nature as horn. They are not applied to any use, but to afford ammonia and animal coal, in the preparation of the prussiat of potash, and in the case-hardening of iron.

HOOPS [Ger. *Reifen*, Fr. *Cercles*, or *Cerceaux*] are made of wood and also of iron, fo the purpose of binding such vessels as are used for domestic purposes, for the conveyance o liquids, &c. Iron hoops are exported to Spain Portugal, the Island of Madeira, and to ou colonies in the West Indies.

HOPS [Ger. *Hopfen*, Fr. *Houblon*]. There i only one species, the *lapulus*, which is sometimes found wild in the hedges near houses and gardens. It is extensively cultivated in Kent Sussex, and Herefordshire, on account of the female calkins, which, after being picked and kiln-dried, are used in brewing, to preserve the beer, and give a bitter flavour to it. "The superiority of the hop, as an ingredient in ou malt liquors, depends upon the fact of its containing within itself several distinct and independent elements of activity, which the bitte herbs that have at different times been employed as a substitute do not possess. Th bitter principle imparts to the beverage a toni quality and an agreeable flavour; while at th same time an aromatic ingredient adds a warmth and stimulating property, and modifies th bitterness. The produce of hops varies from 2 to 20 cwt. per acre; 12 cwt. is considered favourable crop. As to the choice of soil, th hop-planters esteem the richest and stronges ground the best; and if it is rocky within tw or three feet of the surface the hops will prospe well. The Kentish planters account new lan best for hops. They approve the months o October and March as the best for planting and for gathering, about the end of July or th beginning of August. Their ripeness may b tested by their strong scent, their hardnes most convenient way of picking them is on a long, square frame of wood, called a bin, with a cloth hanging on tenter-hooks within it, to receive the hops as they are picked. They must be picked very clean, *i.e.*, free from leaves and stalks; and as there shall be occasion, two or three times in a day, the bin must be emptied into a hop-bag, made of coarse linen cloth, and carried to the kiln to be dried. After being dried, the finer flavoured hops are pressed into sacks, which weigh about 1¼ cwt., and are then sold to the brewer. The importation of foreign hops amounts to about 90,000 cwt. a year. They are the produce of Belgium, France, and Hamburg. The price of hops varies at times; but generally they are worth £5 5*s.* per cwt.

HORN [Ger. Da. and Sw. *Horn*, Du. *Hoorn*, Fr. *Corne*, It. *Corno*, Sp. *Cuerno*, *Asta*, *Hasta*, Port. *Corno*, Rus. and Pol. *Rog*, Lat. *Cornu*], a hard substance growing on the heads of animals, particularly the cloven-footed quadrupeds, and serving them both as weapons of offence and defence. Horns are not very hard, as they may be easily cut with a knife or rasped with a file; but they are so tough as not to be capable of being pounded in a mortar. When in thin plates they have a degree of transparency, and have been sometimes substituted for glass in windows. When heated sufficiently, they become very soft and flexible, so that their shape may be altered considerably. Hence they may be gradually squeezed into a mould, and wrought into various forms. Horns make a considerable article in the arts and manufactures. Bullocks' horns, softened by the fire, serve to make lanthorns, combs, handles for knives, ink-horns, tobacco-boxes, &c. Glue is sometimes made of the raspings or shavings.

HORSE CHESTNUT (*the common*). A method is said to have been discovered by an ingenious artist in Saxony, M. Sprogel, for preparing a paste or size from horse-chestnuts, which may be used preferably to that made of wheaten flour by shoemakers, bookbinders, card manufacturers, and paper-hangers, who consume considerable quantities of grain in their respective trades. This paste is also said to possess a great advantage over the common size, as no moths or vermin will breed in it. The horse-chestnut is also said to have been advantageously employed in tanning; the husks, when burnt to coal, produce an excellent black water-colour; the branches and leaves communicate a good brown in dyeing; the shells also produce a good brown water-colour, and the timber is useful in building.

HORSEHAIR [Ger. *Pferdehaar*, Du. *Paardehaar*, Da. *Hestehaar*, *Hestetagl*, Sw. *Hästhor*, *Tagel*, Fr. *Crin de cheval*, It. *Crine del cavallo*, Sp. *Crin*, Port. *Crina s. Sedas do cavallo*, Rus. *Scherst loschadinaja*, Pol. *Wlosie konskie*] is principally used by upholsterers, for stuffing chairs, sofas, &c., also by saddlers, in their manufacture of saddles, &c. It is an article of great consumption in Great Britain and Ireland, and from th quantities of the article are

HOSIER, the hosiers sell sil and cotton hose (or stockings), gloves, linsey, and bays; also co worsted pieces for waistcoats, bre which some export, and others sell Some employ looms themselves, and ar respect stocking-weavers. The hosiery bra of manufacture are mostly carried on at N tingham, Leicester, and Derby.

HULL, on board ship, is the main body of a vessel, without either masts, yards, rigging, or sails. Thus to strike a hull in a storm is to take in her sails and to cast the helm on the lee side of the ship; and to hull or lie a hull is said of a ship whose sails are thus taken in and helm lashed alee.

HUMHUMS, a species of Bengal calico.

HUNDREDWEIGHT, a weight of 112 lb. avoidupois.

HYPOTHECATE, to hypothecate a ship is to pawn the same for necessaries; and a master hypothecates either ship or goods for relief when in distress at sea; for he represents the traders as well as the owners.

I J

JACCONET, a slight, soft muslin, sometimes plain and sometimes figured, made at Manchester and Glasgow. The finer qualities, which ought to be even woven throughout, perfect at the borders, and free from filling, are used principally for ladies' summer and evening dresses, and the lower qualities are exported to Egypt and the East.

JADE [Fr. *Pierre nephritique*, Ger. *Nierenstein*], or nephritic stone, a species of jasper. It is sometimes of a whitish milky colour, from China; but mostly of a greenish or deep green colour, from America. It gives fire with steel, is semi-pellucid, like flint, does not harden in the fire, but melts by the solar heat in the focus of a burning lens.

JAPAN. Open ports—Kanagawa, Hiogo, and Osaka, Nagasaki, Hakodate, and Nügata. *Kanagawa*, a seaport island on the bay, and 15 miles S. Yedo. Shirtings and yarns are the principal articles in demand at this port. Silkworms' eggs and tea are the principal articles of export. The new silk from the districts in the immediate vicinity of Yokohama begins to arrive at the end of June. Japanese silk is gradually deteriorating in quality, owing to hasty and bad reeling, and to the large export of eggs. The silk from the Oshiu provinces is highly esteemed. It is shipped in bales (about

bale). As regards tea,
common aloe, a na w almost exclusively for
West India island though English merchants
more disagreeab and British ships are largely
the taste is he trade. England, however,
The best c small quantity of common leaf at
large go
general

low rates. The seasons generally open early in June, and statements are taken for the season from 1st July to 30th of June. The following return shows the nature and extent of the import trade in cotton and woollen goods for 1869:—

Description of Merchandize.		$	c.	Quantity.	Value.
otton manufactures ($4,631,885)—		$	c.		Mex. Dols.
Shirtings (grey and white)	Pieces	at 2	90	527,834	1,530,719
T-cloths	,,	2	0	14,413	28,826
Handkerchiefs	Dozens	1	0	4,497	4,497
Brocades (white and dyed)	Pieces	3	0	500	1,500
Chintzes	,,	2	25	13,223	33,057
Velvets	,,	9	0	28,420	255,780
Muslins, cambrics, and lawns	,,	1	0	799	799
Taffachelass	,,	2	40	37,138	89,131
Cotton yarn	Piculs	50	0	51,040	2,552,000
,, flannel	Pieces	30	0	804	24,120
,, singlets and drawers	Dozens	6	0	18,576	111,456
Woollen manufactures ($1,238,447)—					
Camlets	Pieces	12	0	944	11,328
Wool (fancies)	,,	5	0	46,239	231,195
Cloth	,,	40	0	12,810	512,400
Long ells	,,	9	0	1,935	17,415
Blankets	Piculs	30	0	6,227	186,810
Carpets	Pieces	10	0	1,350	13,500
Travelling rugs	,,	5	0	7,351	36,755
Woollen singlets and drawers	Dozens	4	0	2,753	11,012
Woollen and cotton mixtures	Pieces	4	0	54,508	218,032

Shipping. In 1868 189 British ships, tonnage 82,112, against 338 ships, tonnage 17,387, in 1869. *Lighthouses*. The Japanese Government has established, up to the present, four lights, namely:—On Rock Island, one temporary light; in Yokohama Bay, one floating light; at Kanonsaki, one fixed 3rd order light; at Noshima, one fixed 1st class light. *Buoys*. Four of these have been placed in dangerous localities, viz.:—One in Yokohama Bay; one on the Saratoga Spit, in the Bay of Yedo, and two in the Shimonosaki Straits. *Hiogo-Osaka*, *Hiogo and Osaka*, are two commercial ports of great importance on the Osaka River, open in 1863 to intercourse. They are situated within 20 miles of each other, and about 365 miles by sea from Yokohama on the northern shore of a deep bay on the south coast of the island of Nippon. The bay, which is partly formed by the island of Awaji, has two entrances, the one to the north of the island is called the Akashi channel, and communicates with the inland sea; the other and principal one which lies to the south-east of the island, is called the Idzumi channel, communicating as the latter does, directly with the Pacific, it is the one which will be most used by foreign ships. The entrance into the bay by this channel is about two miles wide, and perfectly easy; the bay itself is large and free from shoals. The most difficult portion of the navigation between Yokohama and Hiogo is the neighbourhood of Rock Island, Vries island, and the entrance into the Bay of Yedo, and this portion is already well known to foreign ships, and is securely traversed by them, notwithstanding the total absence of lights. To ensure the safety, however, of vessels arriving at Hiogo, for the first time, as well as for the benefit of shipping in general, the Japanese Government have decided to build lighthouses at the two entrances in the port of Osaka, as well as at Hiogo, and have already applied for the necessary lights to be sent from Europe. Hiogo bids fair to become one of the best foreign settlements in the Far East. It overlooks the lake-like bay of Osaka, in front of a chain of rising hills, and commands a view of some of the most beautiful scenery in the world. The two ports are intimately connected by business ties, yet there is no means of communication between them of any importance. Were there a line from Osaka to Hiogo, and connecting also Isunega with the Diwa Lake, a very large portion of the trade on the west coast would be secured to the two ports. As regards imports and exports it is impossible to give the correct returns, as the greater part of the goods are sold or purchased on commission for merchants at the open ports in Japan or China without knowing where their principals get them from or finally intend to send them. The following table will serve, however, to show the nature and extent of the business done in cotton and woollen manufactures at the two ports for 1869.

Description of Merchandise.		From England and other Countries.			
		Hiogo.		Osaka.	
		Quantity.	Value.	Quantity.	Value.
			Dollars.		Dollars.
Cotton manufactures—					
Grey shirtings	Pieces	29,250	87,920	5,709	20,147
White shirtings	,,	600	2,280	200	701
Drills	,,	100	950	1,375	7,710
T-cloths	,,	1,450	455	..	..
Handkerchiefs	Dozen	760	607	..	..
Brocades and spots, white	Pieces	..	..	199	680
,, ,, dyed	,,	1,000	3,800	..	..
Chintzes	,,	2,600	7,000	..	..
Turkey reds	,,	2,000	5,000	530	2,170
Velvets	,,	1,000	9,400	330	3,313
Muslins and cambrics	,,	6,570	23,995	2,238	1,300
Taffachelass	,,	2,900	9,525	809	8,314
Cotton yarn	Piculs	1,000	45,000	30	1,719
Miscellaneous	Bales	..	8,000	200	2,340
Woollens—					
Camlets	Pieces	1,500	15,500	250	3,867
Lastings	,,	120	1,000	200	279
Crape lastings	,,	..	..	100	1,570
Lustres and Orleans, figured	,,	800	5,510	..	..
,, ,, plain	,,	1,300	6,600	1,100	9,150
Wool fancies	,,	6,000	50,000	715	7,431
Alpacas	,,	250	1,520	200	1,580
Camlet cords	,,	100	326	50	221
Cloth	,,	600	27,400	630	17,850
Spanish stripes	,,	200	1,890	100	1,210
Long ells	,,	1,100	8,120	200	1,087
Blankets	Pairs	13,100	49,400	9,042	35,398
Baratheas	Bales	..	..	..	..
Miscellaneous	,,	..	7,900	1,460	14,263
Metals—					
Iron, sheet	Piculs	..	..	..	..
,, rod	,,	500	1,500	530	1,791
,, pig	,,	..	..	..	..
Steel	,,	..	..	..	..
Lead	,,	450	3,200	2,270	17,147
Tin plates	Boxes	250	2,000	..	..

Nagasaki, next to Kanagawa, the principal seaport and commercial city of Japan, on the S.W. side of the Island Kiu-giu. *Lat.* 32° 44′ 8″ N., *Long.* 129° 57′ 53″ E. *Pop.* 80,000. *Agriculture.* The physical features of the surrounding country being highly mountainous, the nature of the soil is not so fertile as in more level parts, yet it is cultivated to a great extent. Rice is planted in the valleys, but not in considerable quantities. The principal grains indigenous to this district are rice, wheat, rape, millet, buckwheat, some barley, Indian corn, &c. Tobacco and cotton are also grown in small quantities. The tea-plant is also cultivated to some extent. All kinds of vegetables are grown, such as sweet potatoes, turnips, carrots, beans (of all kinds), peas, lettuce, yams, melons, &c. Large plantations of the vegetable wax tree are under cultivation. *Industries.* Coal has been in increasing supply since its demand for steamers and for exportation to Shanghae. The kind of coal most in favour has been known as "Karatsu," produced entirely from Japanese workings in the district of Karatsu, to the N. of Hiado. On an island some five miles from this port Taxashim coal is produced, and has been liked, but the mine has been worked on too limited a scale to admit of its being so well and generally known as the Karatsu coal. *Imports.* The staple imports of British piece-goods, viz., grey cottons, Turkey reds, fancy prints, camlets, lustres, cotton velvets, &c.; also cotton yarn and metals. *Machinery.* The kind in request consists of mining machinery, rice cleaning machinery, gun-cap, cartridge-making, and printing machinery. The value of the annual importations from Europe amounts to about £550,000. *Exports.* Tea, wax, tobacco, galls, camphor, coal, copper, sea-weed, sea-fish, &c. The growth of tea is carried on in the following districts:—Higo, Kurume, Omura, Hizen, Pungo, &c. The teas most esteemed are the Orachimopour, Omura, and Hizen, the prices of which range from 16 dollars to 26 dollars per picul as brought to market. The Chikugo, from Kurume, usually sells at 17 to 20 dollars per picul, and the Higo, which on an average usually realizes from 14 to 20 dollars. Ooji tea, considered the best in Japan, is rarely seen at this port, as also that from Shikoku. Vegetable wax is now much used in England and on the Continent, and is consequently in great demand. The chief districts where camphor is produced are Tosa, Satsuma, and Bungo. The value of the exports to England and other countries is estimated at about £300,000; to England direct, about £50,000. *Shipping.* The movements of British shipping have been very satisfactory since 1859, as may be seen from the following table:—

Arrived.			Cleared.		
Year.	Number of Vessels.	Tonnage.	Year.	Number of Vessels.	Tonnage.
1859	55	22,004	1859	52	21,044
1860	57	20,575	1860	55	19,784
1861	80	33,013	1861	82	33,309
1862	102	31,681	1862	99	30,424
1863	140	44,417	1863	132	42,308
1864	126	43,663	1864	123	41,920
1865	126	43,783	1865	118	41,142
1866	126	41,903	1866	111	37,515
1867	182	60,365	1867	166	58,018
1868	156	58,470	1868	148	57,539
1869	196	72,673	1869	188	71,287

NIIGATA, the district of which it may be said to form the port, is one of considerable extent. It may be regarded as comprising the province of Dewa, the late territory of Aidzu, and the neighbourhood now called the province of Iwashiro, the province of Echigo, parts of Joshin and Shinshin, Etchin, Noto, Kaga, Hida, and the island of Sado. From all these provinces produce may be expected to come here rather than to any other of the open ports. The internal communication from Niigata to other parts of Echigo, to Aidzu and other districts, by means of the Shinano-gawa and Agano-Kawa, with the innumerable cross streams, branches, creeks, and canals connected with these rivers, is truly admirable. *Pop.* is estimated at 40,000 registered inhabitants, with a floating population of 10,000 more. *Agriculture.* The principal crop of the province of Echigo is rice. With the exception of the subdivided province of Oshiu, this province is the largest rice-producing one in Japan. An average yield of 7,500,000 piculs, or 35,700,000 quarters, is obtained. Wheat, barley, and buckwheat are produced for home consumption only. In this province, at Akatsuka, Nagaöka, Sokuzuré, Ojika, Sambouki, and Sômi tobacco is produced in large quantities. It is, however, generally characterized as inferior. The tea of this province is also of inferior quality. The annual production at Murakami, Chinjo, Gosen, Nŭtsu, Muramatsu, and Kurokawa is estimated at under 3,000 piculs. Raw silk is produced in Ecchigo, at Horinoŭchi, Koïde, and what is known as the Uyeda Valley, that is the valley of the right branch of the Upper Shinano-gawa. The production of these places is estimated as somewhat under 100 piculs per annum. Silk is also grown at Tochiwo, Kambara, Gozen, Kinotomura, Iwaburré, Ogoto, Neya, and other places in the province. The silks of Oshin, Dewa, Joshin, and Sinshin are well known and esteemed. Vegetable wax is produced in this province, and still more largely in the neighbouring country of Aidzu near the province of Iwashiro, where it is manufactured into candles. Ginseng is also produced largely, to the amount, it is estimated, of about 10,000 piculs a year. This article, it is thought, will become an important article of export in a little time. Cotton is produced in Oshin, Joshin, and Shinshin, as well as in this province, but for home consumption only. Hemp is produced in Shinshin, Joshin, Dewa, Oshin; and a good trade has been going on in this article between this and the southern ports. Hemp of coarser quality is produced at Yoïta and Nagaöka, and is used for making cordage. Besides the above almost every vegetable product of the other parts of Japan is found within this district. The plant called "Ai" by the Japanese, used for making the common blue dye with which they dye their clothes, various kinds of potatoes, and other root-crops, maize, millet, rape seed, the *Sesamum Orientalis*, called by the Japanese *goma*, from which a very excellent oil for cooking is obtained, are all found here in greater or less abundance. Pulse of different varieties, but chiefly the small bean called "Adzuki," is exported to other parts of the country. Timber is plentiful in Dewa, aidzu, Kaifu, &c. Among annual products deer-skins form a staple article of domestic trade. *Industries.* The manufacture of cotton goods is carried on in many places of this province, and large quantities of imported cotton yarn are thus consumed. The principal seats of this manufacture are Mitsuké, Kameda, and Nagaöka for striped cottons; and Yoshida, Soné, Nagaska, and Ono for white. Silk manufacture is carried on at Tochino, the Uyeda Valley, and Gosen, in this province, and in Joshin, Dewa, &c. The cloth made from hemp for summer wear, called "Chijimi," is manufactured at Ojiya and the valley of the left branch of the Upper Shinanogawa. Cutlery and hardware are made in Aidzu. But it is in its minerals that the district possesses its greatest natural wealth. Copper is found in Echigo, at Mazé, near Takiko-yama, at Gosen, and Osherakawa; in Dewa at Akita; in the island of Sado, and in Aidzu. In Aidzu the annual product is estimated at 700,000 piculs. Lead is found at Takiya and at Buddo, near Murakami. Gold and silver are being mined for in Sudo, the former being found in the greater quantity. Coal is found in Aidzu, and in this province at Akadain, near Shirbatar, at Ojiya, Tsugawa, Gosen and Nunobé, near Murakami. Petroleum issues by a natural spring from the ground at Nütsu, some 12 or 14 miles from Niigata, and is collected by the Japanese for sale. *Trade.* Of the goods imported in British and non-Japanese ships cotton and woollen goods hold the most important place. These consist chiefly of shirtings, cotton, yarn, taffachelass, cotton and woollen mixtures, T-cloths, camlets, black Orleans, castings, nail-rod iron, sugar, raw cotton, &c. Grey shirting is an article that is readily saleable. As a rule cotton manufactures have a much better sale than woollens. Thin nail-rod iron, and probably bar iron, will find a ready market here. The imports are chiefly brought overland from Yokohama. The total value of goods imported in 1869 amounted to about £202,000. The export trade is very trifling so far, owing to the unreasonable prices asked by the Japanese for their pieces. Silkworm eggs will undoubtedly become an important article of export in time, as this port is near to many of the districts where they are produced, such as Gosen, Koidé, and the Uyeda Valley, Yonezawa, &c. *Shipping.* 14 British ships, tonnage 4,944, with cargoes valued at £102,931, entered in 1869.

HAKODATE is on a peninsula on the S. shore of Yesso, in Sangar Strait. *Pop.* about 45,000. *Mining.* The coal-mines of Iwanai are now being worked by an English engineer. The principal mine is on the western coast of the island, in lat. 43°. A road has been cut and sleepers laid down for a tramroad from the sea-shore to the coal-beds, a distance of about two miles. The beds are of a very good quality of coal, resembling cannel coal, burning with little smoke and a clear long flame, no clinkers, and some 12 to 14 per cent. of ash. The average thickness of each bed is six to seven feet. *Trade.* A greater part of Japanese clothing and furniture comes from Osaku, if not all, for scarcely anything is made at this port. The goods are brought up in junks, in exchange for awabee, comboo, irico, and dried and salt fish, which they take down south. The *imports* of cotton and woollen manufactures and metals for 1868 amounted in value to £48,158, and in 1869 to £177,598. The *exports* of sea-weed, fish, silk-worms' eggs, &c., amounted to £99,259 in 1868, and £222,910 in 1869. *Shipping.* In 1868, 102 vessels, tonnage 35,464; in 1869, 130 vessels, tonnage 52,247. *Money, Weights, and Measures at the Open Ports.* Money: Ichibu (silver), average rate of exchange, 1*s.* 4½*d.*; rin or tael=5*s.* 10*d.*; koban (gold), £1 9*s.* 2*d.* Weights and measures: The picul or ton=133 lb. avoir.; king=160 nomme =1⅓ lb.; shaker=10 sung=11¾ inches; riki=36 chro=2½ miles.

JAPANNED WARES [Ger. *Japanischewaare*, Fr. *Marchandis de Japon*], articles of every description, such as tea-trays, clock-dials, snuff-boxes, &c., covered with coats of Japan, whether plain or embellished with painting or gilding. Formerly this manufacture was of great importance, but of late years it has declined.

JASPER [Ger. *Jaspis*, Fr. *Jaspe*]. This stone, which is usually found in the East Indies, Egypt, Tartary, and China, is an ingredient in the composition of many mountains. It occurs usually in large amorphous masses, sometimes in round or angular pieces; its fracture is conchoidal. It is usually divided into four sub-species:—(1.) *Egyptian Pebble.* This variety has a spheroidal figure, and is enveloped in a coarse rough crust. It is chiefly distinguished by the variety of colours which always exist in the same specimen in regular stripes or layers. These colours are different browns, and yellows, and greens. (2.) *Stripe Jasper.* This variety is also distinguished by stripes or layers of different colours; these colours are yellow, brownish red, and green. It is distinguished from the last variety by its occurring in large amorphous masses, and by the disposition of its stripes. (3.) *Porcelain Jasper.* So called because its fracture presents the appearance of porcelain. Its colours are various shades of grey, yellow, red, brown, green, mixed together. Found in mass and in rounded pieces. Greasy; fracture imperfectly conchoidal; opaque; brittle. (4.) *Common Jasper.* Its colours are different shades of white, yellow, red, brown, and green; often variegated, spotted, or veined with several colours. Jasper is mostly employed by jewellers in the formation of seals, and when well polished, is esteemed a very beautiful stone.

JAZEL, a precious stone of a fine blue colour, found in different parts of the East Indies.

ICE is now extensively used for a variety of economical purposes. Its chief value consists in its antiseptic property. Meats and fish are preserved fresh by it more conveniently and efficiently than by any other means, and the largest consumption is in the great markets of our cities. Vessels at sea need not now, as formerly, depend for fresh meat upon live animals, taken at great inconvenience on board, but, by means of a small ice-house, they can preserve their supplies fresh for a considerable voyage. The first attempt made to introduce ice into hot climates was by Mr. Inder, of Boston, who sent, in 1833, a cargo to Calcutta. Of 180 tons, one-third was wasted on the voyage, and 20 tons more in going up the Ganges. This venture, turning out successful, led to others, and now the ice trade is an important branch of shipping business between the West and the East.

Iceland Agate, a precious stone met with in the islands of Iceland and Ascension, employed by the jewellers as an agate, though too soft for the purpose. It is supposed to be a volcanic product, being solid, black, and of a glassy texture; when held between the eye and the light, it is semi-transparent, and greenish, like the glass bottles which contain much iron.

Jean, a cotton fabric, used for making jackets, trousers, stays, &c. It is thick, strong, and twilled.

Jersey, Guernsey, Alderney, and Sark. *Jersey*, the largest and most important of the Channel Islands, lying in the English Channel, 13 miles W. of the coast of France. It is about 12 miles long from E. to W., and 7 miles wide, and contains an area of about 40,000 acres. *Pop.* about 55,163. *Chief towns*, St. Helier, the capital, and St. Aubin. The surface of the country is undulating and fertile; but in consequence of the minute sub-divisions of the soil and the want of capital, agriculture is in a very backward state. The land is chiefly laid out in pasturage and orchards. The most important industries are shoes and hosiery. *Exports.* The chief are cattle, potatoes, and oysters. The principal *imports* are woollens, hardware, soap, glass, earthenware, and coal. *Guernsey*, in the Bay of St. Michael, 30 miles W. of the coast of Normandy, 17 miles N.N.W. of Jersey. *Pop.* about 30,000. The productions are similar to those of Jersey, but the soil is not equal to that of Jersey in point of fertility. *Chief town*, St. Peter's Port. *Alderney*, a dependency of Guernsey. *Pop.* 4,932. It is noted for its breed of small cows. *Sark* is another small island dependency of Guernsey.

Jet [Ger., Da., Sw., and Rus. *Gagat*, Du. *Git*, *Zwarte barnsteen*, Fr. *Jais*, *Jayet*, It. *Gagata*, *Lustrino*, Sp. *Azabache*, Port. *Azeviche*, Pol. *Gagatek*, Lat. *Gagus*, *Gagates*]. This substance is found in France, Spain, Germany, Britain, and other countries. It is found in detached kidney-formed masses, of various sizes, from an inch to seven or eight feet in length. The colour is full black; internal, glossy, opaque: not so brittle as asphaltum, texture striated, fracture conchoidal. Specific gravity 1.259. It has no smell except when heated, and then it resembles asphaltum in its odour. It melts in a strong heat, burns with a greenish flame, and leaves an earthy residuum. Becomes electric by friction, and, when distilled, it yields a peculiar acid. This fossil admits of a high polish, and is chiefly converted into small boxes, bracelets, buttons, and other toys. Combined with oils it forms an ingredient in varnishes, and when mixed with pulverized lime, it is said to produce a hard and durable cement.

Jettison is the throwing overboard of goods for the safety of the remainder, to prevent their capture by an enemy, or the loss of the ship and cargo in a storm. When such an act takes place, the loss is divided between the persons interested. "In cases of a somewhat disputable character, deck-loading, for instance," Arnould says, "goods carried on deck are, *primâ facie*, not in their proper place; besides it is nearly always true of them that they impede the navigation of the ship. On both grounds, it is a received rule that deck-lading gives no occasion for general average. But an exception to this rule may be created by custom, as when it is the custom in a particular trade to carry part of the cargo, or articles of a certain character, on deck; for by the custom the deck becomes a proper place for the goods; and those who embark in that trade as merchants, shipowners, or insurers, accept the impediment of deck-lading as another peril of the traffic, with the usual incident of general average in the case of deck cargo attaching to the adventure." *Damage incidental to jettison.* "On the ground that the accessory follows its principal, all damage necessarily caused to other goods or to the ship by the jettison, itself gives a claim to general contribution. Thus, if holes are cut in the ship in order to get goods or stores out, for the sake of lightening her, or if water go down the hatches while they are open for the purposes of the jettison and damage the cargo in the hold, or if goods, after being brought upon deck in order that other less valuable goods stowed beneath them may be jettisoned, are themselves washed overboard or damaged by the sea, the loss in either case is a general average loss. So where water is thrown down a ship's hatches to extinguish an accidental fire, and other goods are damaged thereby. On the same principle, the freight which but for the jettison the shipowners would have received for the goods jettisoned, must be made good to him by a general average contribution. Goods jettisoned still belong to their former owners, and if recovered from the sea, may be reclaimed by them on paying the salvage expenses."

Inch, a well known long measure, being the twelfth part of a foot, and equal to three barleycorns in length.

India, *British*. [*See* **Bengal**, **Bombay**, and **Madras**.]

India Five per Cents. The public stocks, on which the dividends are paid out of the revenues of British India, are of several descriptions and denominations. There is the Ten and a Half per Cent. Stock of the old East India Company, amounting to £6,000,000, and to be redeemed at the rate of 200 in 1874.

There is also—besides some £8,000,000 of Debenture and Indian Bonds—the Four and Five per Cent. Enfaced Paper, to the amount of £58,000,000, the dividends on which are payable in rupees in India, or by draft thereon; and, lastly, there are the India Five and Four per Cents., at present amounting to about £18,000,000. The dividends on the latter are payable at the Bank of England, like Consols, and it is to them that reference is generally made when India Stocks are popularly mentioned. The India Five per Cents. were issued at par, the Government retaining the option of redeeming them at par in 1870. If the credit of the Government had fallen, and the price of the stock with it, the exercise of this option would have been profitable to the public creditor. The stock, however, rose to a premium, and the Government, resolving not to take advantage of the holders, named a date—10 years later, 1880—for its redemption. The India Five per Cents. are now quoted at about 112; and the Four per Cents., redeemable in 1888, at 103. At these prices, they pay an investor from four and three-eighths to four and a-half per cent. It would be, perhaps, better to say that they would do so if it were certain that the Indian Government would forego its option of redemption in 1880 and 1888, as it did in 1870; because if the option should be exercised at these dates, then, inasmuch as the stock is redeemable at par, the premiums at which they now stand would disappear. Thus, anyone buying India Five per Cents. this week at 112, and looking forward to their redemption at 100 eight or nine years hence, would be bound in prudence to spread the loss of the twelve pounds premium over the remainder of the term. In this way the interest on the Five per Cent. stock would be sure to be not four and a half but three per cent. per annum, or less than the return of an investment in Consols. Of course, this aspect of the security does not appeal to those who obtained the stock originally at par, or have since bought it at low prices; and if there are investors who feel assured that the Indian Government will no more exercise its option in 1888 than it did in 1870, they too will, of course, simply look at the price and the dividend. It will be prudent, however, to remember that the Indian, like all other Governments, will be bound to consider its own interest in the future, as we may be sure it did in the past. It was from no sentimental feeling of indulgence that the Indian Government allowed the public creditor to remain in possession of his premium in 1870, but from a regard for its own credit, and with a far-sighted aim. The circumstances of India are no doubt peculiar, but most Ministers of Finance would regard a premium of 12 per cent. on the public stocks as a sure sign that he was paying too high an interest for his loans. There are two causes which give the Indian Five per Cents. their high value in the market. The first is the general impression that they are guaranteed by the Imperial Government, and so form a sort of second-class Consols; the second is their amount. Of these, the former is by far the most important. No one who lent money to the defunct East India Company had any doubt as to the nature of his security. Although for 100 years before its downfall the Company had put off the last remnants of its character as an Association of Merchant Adventurers, and was a great governing corporation, and although, further, the Imperial Government was constantly asserting rights of sovereignty over India, yet no one buying India Stock imagined that he was becoming a creditor of the British nation. When, however, after the destruction or dissolution of the Company's army in the Mutiny of 1857, the administration of India was remodelled by the Imperial Legislature, and the jurisdiction entrusted to a Council and Secretary of State for India, it was commonly said that the Crown had assumed the direct government of India; and it was popularly stated, in speeches and in writing, that the distinction between the Imperial Government and that of India had become one of form rather than of fact. This, however, was not the view of the statesmen of that period, who took strict care to mark the distinction between the two Governments, and whose determination to make the difference particularly clear to the public creditors, whether of England or of India, deserves to be remembered. The language of the Acts of Parliament under which the Secretary of State raises loans is specific. The preamble of one of them recites that it is necessary for the public service in India that the Secretary of State for India in Council should "be enabled to raise money in the United Kingdom on the revenues of India:" and a special clause of the Act charges the bonds and securities of the Indian Government upon the revenues of India alone. In recalling the conditions on which the Indian loans have been raised, attention need only be directed to indisputable facts. It is not uncommon to find persons not generally ill-informed who believe that the Indian Five per Cents. have a legal security of the same kind as Consols. It is not likely that the holders of these stocks are to any large extent of this opinion, and yet it is certain that within these last 13 years a large amount of "Consol" money has passed into the Indian Five per Cents The probable explanation is that the investors, aware that these stocks are not protected by any formal legal guarantee, are nevertheless persuaded that in the event of an Eastern crisis arising, it would be so much to the interest of the Imperial Government to maintain the credit of the Government of India, and take care that the dividends were duly paid, that the distinction between a legal and a virtual guarantee may be safely disregarded. This guarantee, it has been said, though informal and merely implied, is better than any paper promise—it arises out of the necessities of the case. If there are some who reason thus, there are probably more who do not reason at all, but simply trust. They have staked their money on the integrity of the Empire, and it is not patriotic to imagine or contemplate its subversion or dismemberment. No one has ever doubted that in the event of an attack on India by any foreign Power, the whole strength of the Empire would be asserted to repel it, and the military interests of India would be treated as those of England. With respect to the public debt, it should be remembered that our statesmen, including Lord Palmerston, Earl Russell, and other public men eminent for public spirit, have deliberately preferred to charge the revenues of India with millions of additional interest, rather than give the guarantee of the Imperial Government to the Indian creditor. Rather than extend to the Indian loans the responsibility of the Imperial Government, which stands pledged to Consols, and even to some colonial and foreign stocks, Parliament has left the Government of India to borrow at rates which, on £18,000,000 of stock, make a difference in the charges on the Indian revenue of from £300,000 to £360,000 per annum to the disadvantage of India. It must be supposed that these large sums represent more than a mere convenient separation of accounts; they cannot but express a distinction of pecuniary interests between the two countries and governments. In the early years of the new Indian Administration, the Ministers of the Crown were often pressed very much to place the Indian debt upon the same footing as the National Debt. It was urged that as the whole nation is committed to the maintenance of British rule in India, and must make good all the shortcomings of the Indian Government, whether military or financial, we were gratuitously increasing our own difficulties by letting our representatives, the Indian Council and Secretary of State, raise money at high rates, which with our guarantee they might borrow at low ones. But this argument did not prevail, and the holder of India Stocks has the revenues of India for his sole legal security. To say that the present high price of the Indian Five per Cents. shows that he thinks it sufficient might be misleading, for the Indian Government is one with an almost perennial deficit. But it is a Government believed to be stable. A great mutiny like the last would no doubt send the price of India Stock down headlong, and so would such an attack from the side of Russia as has often been prophesied. But either these events are not feared at all, or it is assumed that the Five per Cent. Stock of a Government, the credit of which England is politically though not legally bound to maintain, is a security worth holding in the face of risks which are small, and contingencies that are confessedly remote.

INDIAN-INK [Ger. *Tusche*, Du. *Oostindische inkt*, Da. *Tusk*, Sw. *Tusch*, Fr. *Encre de la Chine*, It. *Inchiostro della China*, Sp. *Tinta dela China*, Port. *Tinta da China S. de Nankin*, Rus. *Tschernilli*, *Kitaiskia*, *Tusch*, Pol. *Czernidlo indyjskie*, *Tusz*, Lat. *Atramentum indicum*, *S. Chinense*]. This valuable black for water-colours is brought to us from China and the East Indies in small quadrangular cakes, generally marked with Chinese characters. By dipping the end of one of the cakes in a little water, and rubbing it about on the bottom or sides of the vessel, a part of its substance is taken up by the water, which may thus be readily tinged to any shade of black or grey, from such as shall just colour paper to a fine full black.

INDIGO [Ger. Fr. and Du. *Indigo*, It. *Indaco*, Sp. *Anil*, Arab. *Med*] is a light, friable substance, of a deep-blue colour. Its texture is very compact, and the shade of its surface varies according to the manner in which it has been prepared. The principal tints are copper, violet, and blue. The lightest indigo is the best, but it is always more or less mixed with foreign substances, unless it has been very carefully prepared. *Sources of Supply.* "Indigo is at present grown," says Simmonds, "for commercial purposes, chiefly in Bengal and the other provinces of that Presidency, from the 20th to the 30th degree of N. lat.; in the province of Tinnevelly, Cuddapah, and the two Arcots, in the Madras Presidency; in Java; in the largest of the Philippine Islands; in Gautemala, Caracas, Central America, and Brazil. Bengal is, however, the chief mart for indigo, and the quantity produced in other places is comparatively inconsiderable. It is also still cultivated in some of the West India islands, especially St. Domingo, but not in large quantities. Indigo grows wild in several parts of Palestine, but attention seems not to have been given to its cultivation or collection. On most parts of the eastern and western coasts of Africa it is indigenous; at Sierra Leone and other places it is found abundant." The best Bengal indigo, shipped from Calcutta, is the superfine or light-blue, in cakes of cubical form, so light as to float upon water; friable, soft, of clean fracture, and of beautiful copper colour when rubbed with the nail. Other qualities are of shades of violet, red, and copper colour. The African indigoes, from Egypt and Senegal, are fine blues, but generally contaminated with earthy matters. The best of the American qualities, as some of those from Guatemala and Caracas, are nearly equal to Bengal.

INDORSEMENT is a term usually applied to that act by which a person transfers or assigns his interest in a negotiable instrument to some third person, by indorsing or signing his name on the back of the instrument. Indorsements are either *in blank* or *in full*; in the former, the party signs his name only; in the latter, some particular person is mentioned: they may also be either *general* or *restrictive*. A general indorsement is synonymous with an indorsement in blank; a restrictive indorsement is to some particular person, or upon some certain condition. The indorsement is considered in law as constituting a new instrument, and an additional security—as the indorser guarantees the payment of the bill, and stands responsible for the acceptor and all antecedent indorsers. [*See* Bills of Exchange.]

Ingot, a mass of gold or silver from the mines, melted and cast into a sort of mould, but neither coined nor wrought.

Ink [*writing ink*, Ger. *Dinte*, Du. *Ink*, Da. *Blæk*, Fr. *Encre*, It. *Inchiostro*] is composed of different ingredients, the chief of which are gall-nuts, copperas, gum, and logwood, according to the purposes to which it is to be applied. There are several varieties of ink, such as printing ink, writing ink, marking ink, Indian ink, &c., all of which are well known.

Inkle, a sort of broad linen tape, principally manufactured at Manchester, and some other towns in Lancashire.

Insolvent. A tradesman who has not a capital adequate to the payment of his debts is said to be insolvent, in which case he either makes a composition with his creditors, by paying so much in the pound, or becomes a bankrupt.

Instalment is where a sum of money due is, by agreement between the debtor and creditor, to be paid in certain proportions, and at stipulated times, instead of being paid in the gross. Where a warrant of attorney, bond, or other instrument has been given to pay by instalments, unless it is stipulated that, upon default in payment of the first instalment that shall become due, the penalty shall attach, and the creditor shall be at liberty to proceed for the whole, he will be compelled to wait until the day after that assigned for payment of the last before he can proceed. It is therefore the usual practice to stipulate on any instrument for payment by instalments that, upon default of payment of the first, the creditor shall be at liberty to proceed for the whole.

Insurance, the principle of, consists in giving a certain small sum to avoid an eventual great loss, and the sum given, which is called the premium, is in all cases proportioned to the loss against which the persons insuring are to purchase a guarantee. The beneficial consequences resulting are, that by giving up a certain share of what we possess, or might probably gain, we shall be secured from a loss that would perhaps involve us in heavy misfortune, if not in total ruin. The divisions of this subject are three, viz: *Fire Insurance, Life, and Marine Insurance.* Fire insurance is the insurance of houses and goods against fire. Life insurance is really insurance against death; it is, however, a contract entered into by the assurer to pay a certain sum, on the death of the person whose life is insured, to certain survivors. Marine insurance is the insurance of maritime property against maritime perils. Fire Insurance. Risks of this kind are accepted by Joint Stock Associations of two kinds; proprietary companies, who take all the risk upon themselves and reap all the gains; and Mutual or Contributive Associations, the parties insured with which are members, or partners, and participate in the profit or share the loss. These associations are nearly all established in London, but they operate throughout every part of the country, and in many cities abroad, by agencies. From any agency an account of the conditions on which insurances are granted may be obtained gratis. These conditions are always printed in the policy, "and it is in most instances expressly conditioned that they (the offices) undertake to pay the loss, not exceeding the sum insured, 'according to the exact tenor of their printed proposals, or according to the conditions.'" Merchants "sometimes keep open a floating policy on 'goods, their own, in trust, or on commission,' by which means all the merchandise in their possession, wherever deposited (within the district over which the insurance is made to extend), is covered, either wholly or in part, according as the aggregate value of such merchandise shall happen to be under or above the sum insured. A loss under such a policy is settled on the average principle. Thus, if an insurance of £10,000 is effected without specification, and a loss of £2,000 incurred, the merchant would be required to show the total value of the goods held by him. Supposing it to be £20,000—double the amount insured—he would in such case be entitled to recover only £1,000, as he must bear his own risk on the £10,000 uninsured."—*Waterson.* At the time of the insurance the property must be in existence, and not then in course of destruction, or in immediate danger, as nothing can be recovered from the insurers in the event of loss unless the party insuring had an interest or property in the goods insured at the time when the insurance was effected, and when the loss happened. In the cases of heavy insurances, one office will not accept the entire risk, only a part; the rest is insured elsewhere, until the whole interest is covered. There is here a temptation to insure more than the value of the property, and burn it afterwards; to guard against which policies generally provide, in substance and effect, that any previous insurance not made known shall avoid any subsequent policy. The notice is endorsed on the policy, and in case of loss, such office bears its rateable proportion. *Risks* are divided into four classes—Common, hazardous, doubly hazardous, and special. The rates of *premium* range by slight gradations from a minimum of 1*s.* 6*d.* per cent., which covers an ordinary private building, to £3 3*s.* and upwards for insuring specially hazardous establishments, such as factories, sugar refineries, theatres, &c. The average rate throughout the United Kingdom is estimated at 4*s.* per cent. The stamp duty at the rate of 1*s.* 6*d.* per annum on insurance against loss or damage by fire ceased June 25, 1869. Insurance against Loss by Death, or Life Assurance. The theory of Life Insurance is based upon the condition of equalizing, in a pecuniary sense, the risks of life. To realise the theory is necessarily the aim of the practice. The equalization of the risks is performed by means of what is called the Life or Mortality Table, the pivot upon which the whole science of life insurance rests. This table has been aptly compared to a barometer or thermometer, as it is only by its means that an office can arrive at an equitable rate for insuring lives, and also ascertain the value of its premiums. It is absolutely essential for "the solution of all questions depending upon the duration of human life." To construct a mortality table is the task of the actuary, who is a mathematician and a statist. It is based upon observation and facts, and all that can determine the theory is the law which governs the waste of human life in its various stages. "The progress of medical science, the increase or decrease of temperance, the introduction of new luxuries, the price of labour and provisions, the degree of cultivation given to the land, the amount of the imports and exports of the country—these are all more or less necessary and important elements in determining the laws of mortality; or, in other words, enabling us to make a fair estimate or assumption of the number of individuals who will die in the course of one year out of a certain number of individuals at the commencement of that year." The two tables which are now in use are the Carlisle and English tables. The former was compiled by Dr. Milne, who constructed it from the mortality of two parishes only, and the latter was the work of Dr. Farr, who based it upon the returns of the whole kingdom. By these tables the probable duration of life is set down at 41 and 45 respectively; that is, at the birth of a child it is probable that it will live, according to Dr. Milne, 41 years, or, as calculated by Dr. Farr, 45 years. We learn from the latter that a person aged 20 will live probably 44 years; also, that the probable life of a person at 60 is 14 years. From this it will be easily understood that a Life Office can be at no loss in ascertaining the probable duration of any person's life. The person states his age in his proposal, and is, say, passed by the medical officer as healthy. One or other of the tables are consulted, and the probable number of years that the person has to live is discovered. It only remains then to discover how much money, in the shape of an annual premium, the person insuring is required to pay to secure to his survivors a certain sum at his death. Were the premiums reckoned for each person separately it would be excessively high; but it is calculated for a group, say, of 1,000 persons or more. So many persons out of the 1,000, it is calculated, would be gainers by dying before the premiums paid by them had amounted to the sum stated in their policies, and the remainder would be losers, by paying more in premiums than the amount of their policies. The object, then, of the actuary is to fix a rate for the group which will place the 1,000 lives upon an equal footing. To this rate is added a percentage to meet expenses of management, if there is not an annual surplus created sufficient to discharge them out of the interest on investments. This element of interest plays an important part in life insurance, as it is the source whence the office should look for its expenses and the surplus which increases its capital from year to year. To realize the full rate of interest assumed by the office is of great consequence, but it is of greater to invest the funds "in such securities as will not fail to reproduce them undiminished in value when required for the necessities of the institution." The failures of so many public companies of late years led to the passing of an Act in 1870, containing stringent regulations for the protection of insurers and shareholders. Every company commencing business is required to deposit £20,000 with the Accountant-General of the Court of Chancery till its life assurance fund accumulated out of premiums amounts to £40,000. Companies are, moreover, to furnish annual accounts, exhibiting their condition, to the Board of Trade, besides actuarial reports and abstracts every five years from new companies, and every ten years from the old ones. MARITIME INSURANCE. Any person, British or alien, the latter not insuring on behalf of an alien enemy during war, may be insured. This contract is set forth in an instrument called a policy of insurance. This contract is between the party who is guaranteed against loss, the insured, and the party who subscribes the policy, the underwriter. *Subject matter*, &c. Any description of interest may be insured against danger, but the insured must have an interest in it. Wager policies are void. *The Policy*. Every contract or agreement for marine insurance must be expressed in a policy, specifying the risk, the names of the underwriters, and the sums insured. "A policy is either *open or valued*. An open policy is when the value of the thing is not inserted in the policy, and therefore must be proved at the trial if a loss happen. A valued policy is when the value of the thing insured is settled by agreement between the parties and inserted in the policy, usually in this form:—*The said ship, &c., goods and merchandise, &c., for so much as concerns the assured, by agreement between the assured and assurers in this policy, are and shall be valued at £—*. And sometimes the words, *The policy to be deemed sufficient proof of interest in case of loss*. Valued policies derive their origin from the difficulty the assured sometimes had in proving the value of his interest, which induced him to give the insurer a greater premium to agree to estimate it at a certain sum, from which he derives this advantage—namely, that in the case of a total loss he is only bound to show *some* interest in order to satisfy the statute Geo. II., c. 37, but not the value, because that is admitted by, and in the absence of fraud is conclusive upon, the insurer. However, valued policies must not be used as a cover for wagering; and therefore the interest of the assured must be a real, bona-fide interest, not a mere colourable one, otherwise the policy will be void."—*Smith's Mercantile Law. Parts of the Policy.* (1) *Name of the Assured.* A policy is void unless the name or style of firm of the person or persons interested in the subject matter is inserted. (2) *Ship's Name.* The true name of the ship must be inserted, and, if required, "or by whatever other name or names the same shall be called." This applies also to the master's name. (3) *The voyage* also must be truly described, the description comprehending the times and places at which the risk is to begin and end. The voyage, as far as the underwriters are concerned, ends when the ship has been moored twenty-four hours in "good safety." *Perils.* The insurer guarantees against perils "of the seas, men-of-war, fire, enemies, pirates, rovers, thieves, jettisons, letters of mart and counter-mart, surprizals, takings at sea, arrests, restraints and detainments of all kings, princes and peoples, of what nation, condition, or quality soever; barratry of the master and mariners, and all other perils, losses, and misfortunes that have or shall have come to the hurt, or detriment, or damage of the said ——, or any part thereof." To render the underwriter liable in respect of loss by any of these perils, though the ship be lost at the time of insurance, the words *lost* or *not lost* must be inserted in the policy. *Perils of the Sea* means "losses occasioned strictly by sea-damage—by stress of weather, winds and waves, lightning and tempest, rocks, sands, &c." A loss by delay on the voyage, caused by bad weather, "and if the ship be worm-eaten or rat-eaten, or hove done on the beach within the tideway to repair and thereby bilged, these are not losses by perils of the sea." *Fire.* Unless the goods are put on board in a damaged state, and are in consequence liable to generate the fire by which they are consumed, it is immaterial how the fire is created. *Jettison.* The act of throwing goods overboard, to prevent their falling into the enemy's hands, is called jettison. *Date and Subscription.* The assurers subscribe and date the policy thus: "And as we, the assurers, are contented and do hereby promise and bind ourselves, each one for his own part, our heirs, executors and goods, to the assured, their executors, administrators, and assigns, for the true performance of the promises, confessing ourselves paid the consideration due unto us for this assurance by the assured, at and after the rate of ——. In witness whereof we, the assured, have subscribed our names and sums in ——." The insertion of the amount of the premium is usual, though not essential. *Memorandum*, the, is inserted to protect the underwriter from liability to small averages, *i.e.*, partial losses, which might be claimed in respect of certain perishable commodities. It runs thus: "N.B. Corn, fish, salt, fruit, flour, and seed are warranted free from average, unless general, or the ship be stranded." Sugar, tobacco, hemp, flax, hides, and skins are warranted free from average under £5 per cent., and all other goods. Also, the ship and freight are warranted free from average under £3 per cent. unless general, or the ship be stranded. *Stamp.* A policy made in this country must be duly stamped at the time when it is effected; it cannot be legally stamped afterwards. A policy made abroad need not be stamped unless it be made by or on behalf of any person carrying on the business of insurance here or under it. According to any stipulation, agreement, or understanding, expressed or implied, any loss, damage, or gain is payable or receivable in this country.

INTEREST of *money* is a sum paid or allowed for the loan or use of some other sum lent for a certain time, according to some fixed rate or proportion. The sum lent on which the interest is calculated is called the principal, the ratio of the annual interest to the principal the rate per cent., and the sum of the principal and interest the amount. Interest is either *simple* or *compound*. A loan is at simple interest when the interest is paid as it falls due; it is at compound when, instead of being paid, the interest is successively added to the principal at the periods when it falls due, and thus a new and increased principal is formed at every such period. In most countries, the rate is fixed by law, and the loan of money at a higher rate than the legal one is called usury. But in this country, in as far as the mercantile community is concerned, the usury laws are partially at an end. *Simple interest* of any sum for any number of days may be correctly and expeditiously ascertained without the use of any table by the following rule. Multiply the given sum by the number of days, and divide by 7,300, which gives the interest at 5 per cent. If the rate is 4 per cent. deduct from the answer 1-5th; 3 per cent., deduct 2-5ths, and so on. *Compound interest.* In the granting or purchasing of annuities, leases, or reversions, it is usual to allow the purchaser compound interest for his money; and the difference from simple interest is so great in all cases in which the period of time is considerable, that almost all computations relating to annual payments of money for a number of years are made at compound interest, unless it is otherwise agreed. In order to find the worth of any sum to be received at the end of a certain number of years, or, indeed, to solve any question of compound interest, tables are now used, which show the amount of £1, improved at compound interest, at 2½ to 6 per cent., at the end of every year, from 1 to 70. The answer can then be obtained by multiplying the number in the table opposite the term of years by the sum, and the product will be what is wanted.

INTAGLIO, an Italian word, signifying any thing that has figures engraved on it, so as to rise above the ground. It is usually applied to gems.

INVENTORY is a catalogue or particular enumeration of goods, debts, and effects.

INVOICE is an account of goods or merchandise shipped by merchants for their correspondents abroad, in which the peculiar marks of each package, with other particulars, are set forth.

JOBBER, *Stock*, one who trafficks in the public funds, by buying or selling stock when he finds it advantageous to his own interest so to do.

IPECACUANHA [Ger. *Amerikanische Brechwurzel*], a drug from South America, of which there are two sorts, Peruvian and Brazilian: the grey or Peruvian is that most esteemed. It is a small wrinkled root, bent and contorted into different figures, brought over in short pieces and deep circular fissures quite down to a small white fibre or nerve, which runs into the middle of each piece. The cortical part is compact, brittle, and looks smooth and resinous: upon breaking it has very little smell, and a bitterish subacrid taste. The plant which yields ipecacuanha is usually found in the vicinity of Rio de Janeiro. It is of moderate height; some of the stalks generally creep along the ground. The flowers are white and foliated, and produce a sort of brown berry, which when ripe turns to a deep red, and is generally about the size of a cherry. The berry contains a whitish slimy pulp, and two small but hard yellowish grains, resembling a lentil in figure. The roots ought to be chosen new, plump, and unmixed with suckers or filaments.

IRON [Ger. *Eisen*, Fr. *Fer*, It. *Ferro*, Da. *Jern*, Du. *Yzer*, Port. *Zeluzo*, Rus. *Scheloso*, Arab. *Heedid*, Pers. *Mars*], the hardest and most durable of any of the imperfect metals: it is naturally of a livid whitish grey colour, and is found in various parts in great abundance, either in a pure state or intermixed with other feril productions. Iron is found native when it is supposed to be generally of meteoric origin; the quantities, however, found in that state are small. Its ores are numerous and widely diffused. "Some of the oxides, as magnetic and specular iron ore, are heated only with charcoal, as in Sweden, Elba, and India, when the carbon combining with oxygen, the iron is set free and melted. The carbonate, iron pyrites, clay iron ore, red and brown hæmatites and spath ore iron are first washed, and then exposed to a fierce heat in contact with charcoal, coke, or small coal, and a flux either lime or clay, according as the ore is argillaceous or calcareous. These earthy matters become vitrified and form a slag at the surface, while the heavy particles of iron, falling down, run out by a hole at the bottom into moulds, and form pig or cast iron. This is still impure, from the presence of charcoal, sulphur, and portions of silicon and aluminium. It is again twice fused in the refining and puddling furnaces, and exposed to the influence of a current of air at a high temperature, when the whole of the charcoal and sulphur are burnt out, and the other impurities form a slag at the surface. The metal is taken out, beaten or pressed, and then wrought into bars, which form the malleable or wrought iron of commerce."—*Royle.* The best iron comes from Sweden, Norway, Russia, and India, but the production and cost of that of Great Britain are more and less respectively than any other country. The great seats of the trade in England are:—In Staffordshire, near Birmingham, around Walsall, Bilston, and Dudley; in South Wales, around Merthyr Tydvil, in Glamorganshire, and in the Forest of Dean, on the border of Wales; in Shropshire, in and around Colebrook Dale. There are, besides, many works in Yorkshire, Lancashire, and Derbyshire. In Scotland, the works are all in the neighbourhood of Glasgow and Falkirk; the chief are those of Calder, Gartsherrie, Clyde. Dundyvan, Monkland, and Carron. *Production from British ores of pig iron.* In 1864, 4,767,951 tons, value £11,919,877; in 1865, 4,819,254 tons, £12,048,133; in 1866, 4,523,897 tons, £11,309,742; in 1867, £11,902,555; in 1868, 4,970,206, £12,381,281. Several qualities of malleable iron are known in commerce. The pure metal is very rare, carbon being always present, and generally some other foreign substances, as phosphorus, sulphur, silicon, arsenic, &c, that injuriously affect its quality. The nearest approach to purity in which it is obtained is in the fine wires used for pianoforte cords and the fine teeth of mill-cards. The various qualities of malleable iron are designated as strong iron, red short, and cold short, of all which there are varieties. The first may be worked hot or cold without risk of fracture, and is applied to purposes requiring the greatest strength, as the harder varieties of chain cables, boiler plates, &c., and the softer and more ductile, for horse-shoes, nails, wire, &c. Red short iron is brittle at a red heat, a quality commonly due to the presence of sulphur. The parts of the latter in 10,000 are sufficient to destroy the welding powers in iron. Cold short iron is brittle when cold, though it may work well while hot. Prices in 1871:—

		At present.	A year ago.	Rise.
Bars, Welsh..	per ton	£9	.... £7½ ..	£1½
,, Staffordshire	,,	10	.... 8½ ..	1½
Nail Rods......	,,	9¼	.... 7¾ ..	1½
Sheets, single ..	,,	12	.... 10 ..	2
Pig, Scotch	,,	3¼	.... 3 ..	¼

IRON-WOOD [Ger. *Eisenholz*, Fr. *Bois de fer*], a species of wood of a reddish cast, so called on account of its corroding, as that metal does, and its being remarkably hard and ponderous, even more so than ebony. The tree which produces it grows principally in the West India islands, and is likewise very common in South America and in some parts of Asia, especially in Siam. Iron-wood is frequently employed in the manufacture of works of taste, and in the formation of such articles as are required to possess durability.

ISINGLASS [Ger. *Hausenblase*, Fr. *Colle de poisson*], a gelatinous substance made from fish, used by the confectioner-cook and glue makers. The best is made in Russia.

ITALY, a kindom of South Europe, formed of a continental portion, a peninsula, and several islands. Exclusive of the islands, it is situated between *Lat.* 36° and 47°, or, inclusive of the islands, 35° and 41° N., and between *Lon.* 6° and 19° E. On the N. are France and Switzerland, the country of the Grisons, and Germany: on the E. the Adriatic: S. and W. the Mediterranean. Its length, from the foot of the Alps to the utmost verge of Calabria, is about 600 miles; its breadth varies from 95 to 300 miles. *Area*, 107,961 square miles. *Pop.* 25,527,915. *Divisions*. Piedmont, *pop.* 2,908,015; Liguria, 825,588; Lombardy, 3,266,218; Venetia, 2,686,051; Emilia, 2,104,634; Umbria, 639,454; Marcha, 924,959; Tuscany, 2,097,426; Abruzzi and Molise, 1,265,195; Campania, 2,728,308; Puglia, 1,373,532; Basilicata, 512,943; Calabria, 1,188,176; Sicily, 2,494,232; Sardinia, 613,184. *Revenue*, 1869, £32,180,670. *Expenditure*, £39,416,352. *Public debt*, 1867: Capital, £271,016,326. Interest, £13,311,874. *Surface*. Though of various quality, the soil, for the most part, amply repays the labour of the farmer, and is in some sections, where irrigation has been resorted to, of an exuberant fertility. It is a heavy loam, almost marshy in the plain of Lombardy, dry and poor in the hills, but fertile in the valleys. *Minerals*. Its wealth is very small. The precious metals, as well as copper, iron, lead, &c., are found in the mountain districts; but mining is so neglected that it furnishes a very insignificant part of the national resources. Alum is obtained in considerable quantities in the Papal States and in Naples, vitriol and antimony in Parma, sulphur in Naples, statuary marble (the best known) near Verona and Carrara. Alabaster, agates, jasper, and garnets are also found in the Apennine range. *Agriculture*. All kinds of grain are produced, including rice and maize, pulse, millet, &c. Rye, oats, and barley are only raised in limited quantities, the principal breadstuffs being wheat for the wealthy classes and maize for the poor. The sugar-cane is cultivated in the southern portion of the peninsula and in Sicily, but its product is not equal to that of the cane of the West Indies. The cotton-plant thrives well in Sicily. Hemp and flax are grown everywhere in sufficient quantities for domestic consumption. The olive-tree grows almost everywhere in Italy, and the oil obtained from its fruit is one of the principal articles of export. The tobacco culture is of no great importance. Saffron, safflower, and capers are exported. One of the principal products is silk, the export of which exceeds in value that of all other articles. "It is calculated that only two-thirds of the area of the kingdom capable of production are cultivated, and that the rest lies waste. The superficial extent of the productive soil is 23,017,096 ellasas or hectares, divided thus:—Arable land, 11,003,061 hectares; meadow land, 1,173,436; rice grounds, 144,903; olive plantations, 554,767; chestnut plantations, 585,132; woods and forests, 4,158,349; pastures, 5,397,448. There are besides 3, 997,057 hectares of rock and marsh, which, being considered as unproductive, are not liable to the land-tax. Of the land capable of cultivation, more than half is devoted to the growth of cereals, the annual produce of which is estimated as follows:—Wheat, 34,397,168 hectolitres; maize, 16,352,141; rye, 2,799,951; barley and oats, 7,467,239; rice, 1,433,398; other cereals, 6,543,905. Total, 68,993,802."—*Statesman's Year Book*. *Commerce*. Total real value of the imports and exports (exclusive of specie), distinguishing the value of imports for home consumption, and of Italian produce exported in each of the years 1866, 1867, 1868:

IMPORTS.

	Total.		Entered for Home Consumption.	
Years.	lire.	£	lire.	£
1866	917,297,605	36,691,904	870,048,517	34,801,941
1867	965,221,763	38,608,870	885,910,961	35,436,438
1868	986,386,761	39,455,431	896,569,122	35,862,765

Shipping. Total tonnage of merchant vessels belonging to Italy in 1866, 16,210 vessels, 717,364 tons; in 1867, 17,784 vessels, 817,175 tons; in 1868, 17,946 vessels, 882,829 tons. PRINCIPAL PORTS. ANCONA is in *Lat.* 43° 38′ N., *Lon.* 13° 29′ E., 116 miles N. by E. of Rome. *Pop.* about 20,000. *Trade*. British trade at this port has increased considerably for the past few years, due to the facilities afforded by railway communication with the interior. The principal and only drawback to a still more considerable increase of trade is the neglect shown in not providing a proper or equal depth of water all over the harbour. An excellent mole has been erected, but only one vessel can approach it at a time: the result is that the majority of vessels have to discharge into lighters, which necessarily occasions loss of time and more expense. As the principal trade at this port is now done by steamers, the indirect trade in British vessels has greatly increased. Ancona cannot provide cargo sufficient to fill a steamer, but it has been found very convenient for vessels of that class, after loading at Trieste and Venice, to complete their cargoes here. British vessels, as a rule, can always command the best freights, confidence being placed in them. BRINDISI is situated just within the Adriatic. *Lat.* 40° 39′ N., *Lon.* 18° 20′ E. *Pop.* about 9,500. The harbour at this port is spacious, secure, and convenient. Vessels of any size can come into the inner harbour, which is a kind of natural dock, go alongside the quay, and take in cargo at once, in any weather.

IMPORTS FROM GREAT BRITAIN AND BRITISH POSSESSIONS.

	1863.		1864.		1865.		1866.		1867.		1868.		1869.		1870.		1871.	
	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.
		£		£		£		£		£		£		£		£		£
Coals .... tons	2,500	3,500	4,500	6,600	9,500	15,400	16,030	28,500	19,000	33,900	16,000	29,000	23,000	36,000	25,000	38,000	28,000	80900
Silk (in transit from India to N. Italy) cwts.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	100	23,900	900	180000
Other articles	..	16,867	..	8,673	..	3,461	..	1,124	..	3,882	..	2,551	..	..	..	10,783	..	11300
Total value	..	20,367	..	14,073	..	18,861	..	29,624	..	37,782	..	31,551	..	36,000	..	72,683	..	272200

EXPORTS TO GREAT BRITAIN AND BRITISH POSSESSIONS.

	1863.		1864.		1865.		1866.		1867.		1868.		1869.		1870.		1871.	
Olive oil ....tuns	..	..	250	13,600	130	6,600	340	16,000	130	7,600	500	25,000	90	3,600	20	800	800	30,400
Linseed	..	5,800	..	12,400	..	9,400	..	..	..	..	..	..	..	..	..	..	..	..
Other articles	..	3,900	..	1,600	..	700	..	..	..	1,500	..	1,500	..	..	..	100	..	1,600
Total value	..	9,700	..	27,600	..	16,700	..	16,000	..	9,100	..	26,500	..	3,600	..	900	..	32,000

Italy

Shipping. Vessels engaged in trading, 17 in 1869, tonnage 4,667; in 1870, 11 vessels, tonnage 2,689; in 1871, 14 vessels, tonnage 3,009. British shipping has increased very much lately at this port, in consequence of the establishment of the mail service with Alexandria. CAGLIARI, a seaport of Sardinia, cap. of the island. *Lat.* 39° 20′ N., *Lon.* 9° 8′ E. *Pop.* about 28,000. It stands on the south side of the island, at the bottom of a gulf of the same name, which forms a large and secure harbour, and exports considerable quantities of olive oil and salt. *Trade* (the only) with Great Britain and the island consists in the importation of coal and exportation of mineral ore. GENOA is at the head of the gulf of the same name, Mediterranean, 79 S.E. TURIN. *Lat.* 44° 24′ 18″ N., *Lon.* 8° 54′ 24″ E. *Pop.* about 130,000. *Trade.* English trade with Genoa, though never actually as large as it is now, was relatively greater forty or even twenty years ago. Little was then done except with England, France, and the Levant, and of these the English trade was far the most important, and was then carried on exclusively in our own bottoms. In those days there was no such thing as direct trade with the United States; the traffic with the Rio della Plata was in its infancy; and guano came from Chili under the English or American flag. The imports, therefore, of most articles from beyond the seas passed through England, or were sent by English firms and in English vessels. All this is completely changed now. The enormous and constantly increasing traffic between Genoa and the Genoese colony established in the Argentine Republic has thrown into Genoese hands the direct trade, not only with that State, but with the whole of South America. Cotton and petroleum are bought in the United States by telegraph from hence, and are imported direct, and more and more each year, in Italian vessels, while in our own coal trade we are steadily being cut out by our enterprising and economical Genoese rivals. This great expansion of trade has had, among other results, that of effectually emancipating the Genoese merchants from the sort of tutelage they were under for some time after the formation of the Sardinian kingdom to the English merchants established there; so that there are comparatively few English firms here now, though the business done with England has so enormously increased. There is no reason, however, why Englishmen should not do an excellent business here. The trade with England has always been, and is, essentially an import trade; the exports never reaching one-eighth of the value of the imports. Formerly Genoa was the great mart or emporium of English goods for Upper Italy, and the port traders kept stock in Porto Franco, and received orders, or sold in the interior, from such stocks. Now, however, with the facilities of communication, the old business is almost wholly a thing of the past. The tendency of trade is more and more for the consumer and producer to draw nearer to one another, and, if not to eliminate the middleman or merchant, to limit his action to the conveying of goods as rapidly and cheaply as possible from the one to the other. It is feared that our shipowners must resign all hope of doing their carrying trade for the Genoese, who have been for some years walking up to us, hand over hand, till, in 1871, for the first time, their tonnage from England was greater than ours, and in 1872 their advances became still more rapid. On the other hand, it is believed that the consumption of most articles of British manufacture is increasing in this country, and will continue to increase sensibly in the aggregate with the increasing wealth of the Italians; and that, even if native industry succeeds in underselling us in some articles of essentially English production, we shall always beat them in others; and, in the aggregate, the value of the goods we shall sell them will be at least up to the present amount, and, being home produce, will leave us a larger profit than when a great part of our dealings consisted in supplying them with the produce of foreign countries. The imports and exports by sea, from and to England or English possessions, during the ten years, 1862–1871:

	Imports. £ sterling.	Exports. £ sterling.	Totals. £ sterling.
1862	3,613,892	195,940	3,809,832
1863	3,282,756	255,859	3,538,612
1864	2,511,188	132,264	2,643,452
1865	2,545,220	170,488	2,715,708
1866	2,519,796	167,156	2,686,952
1867	2,816,280	366,632	3,182,912
1868	3,015,164	163,276	3,178,440
1869	3,378,128	172,836	3,550,964
1870	3,734,548	690,676	4,425,224
1871	3,543,238	462,455	4,005,693

Imports. The principal articles from England are coal, iron, and other metals, in a more or less advanced state of manufacture, articles of colonial produce, cotton goods, yarns, raw cotton, woollen stuffs, chemicals, cured fish, and hemp thread. *Coal.* The import of this article has been steadily increasing, and such is the development of industrial establishments in the portion of Italy supplied by this port, that even if the high price of English coal is maintained, the import is sure to increase. The imports were, in 1868, 276,000 tons; 1869, 283,000 tons; 1870, 311,000 tons; 1871, 344.000 tons. The demand has been steadily increasing for ten years. *Iron.* The value of English iron and other metals was as follows:—

1862	£735,884	1867	£516,496
1863	592,508	1868	440,720
1864	528,576	1869	702,852
1865	41[illegible],660	1870	644,148
1866	360,596	1871	621,860

Sugar. From England the import of sugar is chiefly of "unstowed," which quality is provided by England alone. Since the opening of the Mount Cenis Tunnel, however, great quantities of French sugars have been poured into the country by that route. Two refineries are being set up at Sampierdarena. These will be fitted up with every modern improvement, and will begin by producing 20 to 30 tons a-day, to reach, if possible, a production of 100 tons per diem, or more. The first purchases of "raw" have been made in Mauritius, but in future Egypt is calculated upon for a supply. *Coffee.* The qualities chiefly imported from England are Ceylon, Domingo, and Costa Rica. Of these Ceylon will in future come direct by Canal, and there is consequently every probability of a considerable diminution in the import of this article from England. The value of sugar and coffee imported from England is here given:—

	Sugar.	Coffee.
1862	£177,224	£87,556
1863	213,104	96,032
1864	114,200	97,880
1865	94,984	51,256
1866	128,180	75,748
1867	93,272	81,212
1868	222,240	101,564
1869	256,512	146,664
1870	232,048	151,040
1871	290,420	119,708

Cotton is being imported more and more from the producing countries, as the import from England of late years has been small. *Yarns.* The Italians can compete with us in the coarse numbers, but not in the fine. *Manufactures.* Native industry has been greatly developed, and the production especially of the stuff here called "Cordatti" has enormously increased, as the men prefer it to English shirting, and the women wear it instead of prints. The following is the value of these imports:—

	Raw Cotton. lire.	Yarns. lire.	Manufactures. lire.
1862	3,327,300	2,639,400	10,775,700
1863	4,580,500	1,721,100	7,151,600
1864	2,685,600	1,486,500	4,735,600
1865	2,690,800	2,568,500	10,081,600
1866	6,693.200	4,278,200	4,736,900
1867	6,062,800	6,645,800	4,668,300
1868	6,336,400	7,434,000	7,310,300
1869	4,413,800	7,531,600	8,828,500
1870	5,894,334	3,869,621	5,878,776
1871	4,629,043	6,478,341	8,065,067

Exports, the, to England are limited. Olive oil takes the lead. In good years the export is estimated at 1,000 tons; in bad years, almost nothing. *Maccaroni or paste* finds a ready market among the Genoese at Buenos Ayres. *Shipping.* In 1869 362 British vessels, with cargo tonnage 168,730, arrived from England or her possessions; in 1870, 299 vessels, tonnage 161,313; in 1871, 362 vessels, tonnage 182,452. **LEGHORN** [It. *Livorno*]. *Lat.* 43° 37′ 7″ N., *Long.* 10° 17′ 7″ E. *Pop.* about 90,000. It is 48 miles S.W. Florence, with which and with Pisa it is connected. This port supplied British produce formerly to Civita Vecchia and the Roman States, to the ports of Sicily, Sardinia, and Corsica, and to

Tunis, Tripoli, Algiers, Turkey, Egypt, Syria, and the Morea, and in return received back rags, shumach, liquorice-paste, brimstone, pumice-stone, timber, wheat, senna, gums, ivory, feathers, &c. This trade has now almost entirely disappeared, and merchants are now engaged exclusively in supplying the wants of the part of Italy of which Leghorn is the port. *Manufactured goods.* British have increased about one-fourth within the ten years 1862-1871, notwithstanding the great development of the Italian manufactories of cotton cloth. The articles which have suffered by Italian competition are the more weighty descriptions, on which the duty tells heavily, such as domestics or grey stouts, cotton twist and sail-cloth, linen, sheeting, &c. English shirtings and T-cloth hold their ground fairly, and the annual consumption or sale may be estimated as follows:

Shirtings—Leghorn	40,000	pieces.
Florence, Pisa, and Pontedera	30,000	„
Grey T-Cloths—Leghorn	100,000	„
Florence	50,000	„
Pisa and Pontedera	20,000	„

The Italian Customs duties tell heavily upon the importation of these articles. It is the practice to levy upon gross weight, and the receiver of baled goods is made to pay full duty upon the materials in which they are packed, such as paper, boards, oil-cloth, canvas and ropes, or iron hoops. The duty is surcharged with 5 per cent. for manifest tax, and upon the total duty a further payment of 10 per cent. is exacted under the name of war-tax. Besides, the Government insists on the payment of import duties in gold coin, which must now be purchased at an agio or premium of about 12 per cent.; and the importer finds his operations still further cramped because, owing to the depreciated value of the Italian bank-notes, which have a forced currency, he has to pay for his goods in bills on London, costing about 12 per cent. above the par of exchange. *Woollen goods.* The finer qualities find little sale here on account of their high prices, but British woollens intermixed with cotton are in great favour, and there is a large sale for what are called black union cloths, blue pilots, sealskins, naps, presidents, &c., the produce of Leeds and Huddersfield; there is also a good sale for Bradford goods, such as "Orleans," "fancies," &c. The imports of merchandise from Great Britain and other countries in 1871 were as follows:—

	Tons.	From England. Tons.
Sugar, refined	6,690	287
Ditto, unrefined	2,699	955
Cocoa	92	55
Coffee	1,830	553
Cinnamon	8	6¾
Cassia lignea	5¾	3⅛
Confections and preserves	7¼	4
Molasses	29	3¼
Pepper and pimento	230	185
Syrups for drinks	11¼	5¼
Tea	3¾	3¾
Cassia and tamarinds	103	92
Pig iron	3,023	2,739
Wrought and railway iron	10,230	7,815
Copper	114	72
Tin	264	247
Ditto, mineral	33	31
Lead	315	32
Coals	66,396	55,386

Exports. The trade with Great Britain has increased very sensibly of late years, especially in oils, the quantity annually shipped being now estimated at 100,000 cases, whereas 25 years ago the export only amounted to 12,000 cases, on an average. Shipments of iron ore from Rio (island of Elba) have also increased. In 1872, 56,310 tons were put on board. In other articles of export the quantities have greatly diminished. *Shipping.* The movements of British shipping in 1871 were:— Arrivals, 109 vessels, 26,365 tons. SICILY, an island in the Mediterranean, between *Lat.* 36° 38′ and 38° 18″ N., *Long.* 12° 25′ and 15° 40′ E. *Pop.* 2,494,232. Its form is that of a triangle, terminating in three capes: that which is nearest Italy is called Capo del Faro; that near the Morea, Capo Passaro; and the third, which points to Africa, Capo di Boco. *Imports.* The goods imported from Great Britain and her colonies form one-third to one-half of the entire imports of the island, but the proportions vary year by year. In 1868 they were scarcely more than one-third; in the following year they were more than one-half; and in 1871 they were little more than two-fifths of the entire imports. They consist of colonial goods, a term which comprises also tobacco and petroleum; cottons, both in piece and in yarns, and mixed with linen and with wool; linens, woollens, silks, hardware, drugs, colours, salt-fish, metals, and occasionally cereals. The extent to which these articles are severally imported, and the progress made in the consumption of British goods in Sicily during three years, is shown by the following comparative list, which gives the approximate values of the articles:—

	1868.	1871.
Colonials	£73,000	£75,000
Cottons	148,000	280,000
Linens	24,000	35,000
Woollens	24,000	70,000
Silks	2,000	12,000
Hardware	11,000	10,000
Drugs and colours	2,000	10,000
Salt fish	10,000	30,000
Hides	50,000	50,000
Coals	76,000	170,000
Iron	65,000	90,000
Copper	65,000	75,000
Lead	5,000	8,000
Tin	14,000	18,000
Cereals	..	7,000
Sundries	20,000	119,500
Totals	£589,000	£1,059,500

The *exports* in 1871 amounted to £1,473,000. *Shipping.* The numbers and aggregate tonnage of the steamers and sailing vessels which entered the several ports of Sicily in 1871 were:

Ports.	Steamers.	Tons.	Sailing Vessels.	Tons.	Total.		No. of Men in Crews.
					Ships.	Tons.	
Palermo ……	239	192,703	126	26,709	365	219,412	7,851
Messina ……	255	195,158	124	27,363	379	222,521	8,069
Catania ……	56	36,267	23	5,064	79	41,331	1,585
Syracuse ……	2	1,679	..	..	2	1,679	79
Scoglitti ……	..	..	11	606	11	606	91
Terranova ……	..	..	4	816	4	816	31
Licata ……	6	2,931	23	5,617	29	8,548	329
Girgenti ……	34	22,203	64	12,133	98	34,336	1,333
Mazara ……	..	..	33	809	33	809	255
Marsala ……	13	6,743	52	4,835	65	11,578	732
Trapani ……	2	1,494	24	4,405	26	5,899	246
Total ……	607	459,178	484	88,357	1,091	547,535	20,610

Harbours. From Trapani, at the extreme west all round to Syracuse, on the east coast, there is no port where a vessel of any size can take refuge in bad weather, or can even load or discharge in safety. Even the port of Trapani, though spacious, has only 18 feet depth of water, so that vessels drawing more must lie out in the road to take in or discharge cargo. Marsala, the next port, has only 15 feet of water, and the anchorage at that depth is extremely limited. But the want of harbour accommodation is most seriously felt in the sulphur ports of Girgenti, Licata, and Terranova, on the south, and Catania on the east coast of the island, and this want is productive of great inconvenience and delay, as well as of peril. Girgenti and Catania, it is true, have already small harbours, constructed many years ago, but quite inadequate to the requirements of their actual commerce. Licata and Terranova have absolutely no harbour. At these latter ports vessels of whatever size, and at Girgenti, those drawing more than 10 feet, are compelled to anchor in the open roads, exposed to all the vicissitudes of the weather, while taking in their cargo; and as winter is the chief season for shipping sulphur, this is a most serious disadvantage. If a strong breeze springs up, all communication with the shore is cut off while it lasts. Should it blow a gale from the westward, ships in the roads have the alternative either of riding it out with the imminent risk of drifting on a lee shore, or of running out to sea till the gale abates. The railroad which is to connect Catania with Palermo is already completed as far as Leonforte, a distance of 48 miles, and has opened up the rich sulphur districts in the heart of the island and brought them into easy communication with Catania. *Money.* The Lira, average rate of exchange, 25=£1 sterling. *Weights and measures.* The kilogramme=2·20 lb. avoir. The litre, liquid measure=0·22 imp. gall.; the hectolitre, liquid measure=22 imp. gall.; dry measure, 2·75 bushels.

JUNIPER BERRIES. There are twelve species of the tree from which these berries are gathered. The most remarkable is the common juniper, which is found in many parts of this country, upon dry, barren commons, where it seldom rises above the height of a low shrub, which grows naturally in dry, chalky, or sandy land. Of this species there is a variety called Swedish juniper, which grows ten or twelve feet high, very branchy the whole length. Juniper berries have a strong, not disagreeable smell, and a warm, pungent, sweet taste, which, if they are long chewed or previously bruised, is followed by a bitterish one. The pungent seems to reside in the bark, the sweet in the juice; the aromatic flavour is in oily vesicles spread through the substance of the pulp, distinguishable even by the eye, and the bitter in the seeds. These berries are chiefly used in the distilleries of Holland and Great Britain, to give flavour to the geneva of the former and the gin of the latter. For this purpose the essential oil of the juniper is, or ought to be, used.

JUTE has long been known in India in the manufacture both of cordage and cloth, but it only came into use in England about the year 1840. It is the fibres of an annual plant, common all over India, China, and Ceylon. It is used abroad for making coarse sacking to hold sugar and other produce, and in this country for coffee-bags, &c.

IVORY [Ger. *Elfenbein*, Fr. *Ivoire*], a very hard, beautiful, and compact substance, of a white colour, and capable of a very good polish. It is the tusk of the elephant, and is hollow from the base to a certain height, the cavity being filled up with a compact medullary substance, seeming to have a great number of glands in it. Ivory is also obtained from the tusks of the narwhal, the walrus, and the hippopotamus; but the best and largest supply is from the elephant. The tusks are obtained principally on the coasts of Africa and India. "The African ivory is superior to any other;

its appearance when first cut is mellow, warm, and transparent, almost as if soaked in oil, and with very little appearance of grain or fibre: the oil dries considerably by exposure, and a permanent tint then remains, a few shades darker than writing-paper. The Asiatic ivory is more dead-white at first, but is more disposed of the two to turn yellow afterwards; it is also less dense, and does not take so high a polish." The choice of ivory is accompanied with much uncertainty even to experienced buyers. The buyer has to make the best selection he can by "choosing a tusk as nearly straight, solid, and round as possible, with a smooth rind, free from cracks, and a point that gives evidence in the worn part that the tusk is of the desired fineness of grain." The importations to this country are chiefly from Ceylon and the West Coast of Africa.

Ivory-Black [Ger. *Elfenbeinschwarz*, Du. *Fluweelzwart*, Da. *Elfenbeen svarte*, Sw. *Elfenben svärta*, Fr *Noir d'Ivoire*, It. *Nero d'Avorio*, Sp. *Negro de Marfil*, Port *Negro de Marfim*] is the coal of ivory or bone formed by great heat, while deprived of all access of air. It is now, however, very well known that very little, if any, of what is called ivory-black is made in this manner, except some of the finest sorts used by miniature painters: a great deal of what is sold under this name is the charcoal of the hard woods reduced to powder.

K

Keel, the lowest piece of timber in a ship, running her whole length from the lower part of her stem to the lower part of her stern-post. Into it all the lower futtocks are fastened, and under part of it a false keel is often used. *Keel* is also a flat-bottomed vessel used on the Tyne to carry coals. It contains on an average 21 tons.

Keg is a small barrel or cask containing from four to five gallons; a keg of spirits contains five gallons.

Kelp, in the glass trade, a term used for a sort of potash made use of in many of the glass-works. It is the calcined ashes of a plant called by the same name and in some places "sea tags," or "laces," a sort of thick-leaved sea-wrack. This plant is thrown on the rocks and shores in great quantities, and in the summer months is raked together and dried as hay in the sun and wind, and afterwards burned to the ashes called kelp.

Kentledge, ballast in the form of pig-iron.

Kersey [Ger. *Kirsey*, Fr. *Carisée*], a species of coarse woollen stuff, usually ribbed, manufactured in Yorkshire.

Kerseymere, a kind of thin woollen stuff, generally woven plain, and made from the finest wool. It is made in the West of England.

Khallah, a long measure used in Arabia; it is the geometrical pace of the Europeans: it contains three akdams or feet, and 12,000 khulevats make the paresang.

Kiffekel. This mineral is dug up near Konie, in Natolia, and is used in forming the bowls of Turkish pipes.

Kilogramme, a French weight, nearly equal to 2½ lb. avoir.

Kingwood, an extremely hard fancy wood, of a dark chocolate colour, found growing in Brazil, and employed in cabinet work.

Kino, an astringent gum used for communicating a nankeen colour to cloth. It is found in India, Africa, and America. It occurs in small and shining brittle angular fragments, of a deep brown colour.

Kiste, a liquid measure of Arabia, equal to a pint of our measure.

Knee, in a ship, a crooked piece of timber, bent like a knee, used to bind the beams and futtocks together, by being bolted fast into them both. These are used about all the decks.

Knees, *carling*, in a ship, those timbers which extend from the sides to the hatchway, and bear up the deck on both sides.

Knives [Ger. *Messer*, Du. *Messen*, Da. *Knive*, Sw. *Knifvar*, Fr. *Couteaux*, It. *Coltelli*, Sp *Cuchillos*, Port. *Facas*, Rus. *Noshi*, Pol. *Noze*] are well known utensils made of iron and steel, and employed to cut with; they are principally manufactured at Sheffield, London, &c. Knives are made for a variety of purposes, as their different denominations imply; such as table-knives, oyster-knives, pruning-knives, pen-knives, &c.

Knots *of the log-line* are the divisions made thereon, which are usually seven fathoms, or forty-two feet; but ought to be fifty-one feet; and then, as many knots as the log-line runs out in half a minute, so many miles does the ship sail in an hour, supposing she goes at an equal rate, and allowing for yaws, lee-way, &c.

Korsec, a corn measure of Poland=3½ imp. bushels.

Kutera, a gum somewhat resembling tragacanth, but not of so glutinous a nature, lately imported from Hindostan. In water it slowly softens to a pulp: but if first powdered, and then boiled a quarter of an hour, it dissolves completely, a tea-spoonful giving to three pints of water a thin sirupy consistence. The natives of India mix it with other gums to make varnishes, and use it much in some diseases of horses.—*Trans. of Soc. of Arts.*

Kyanan. On the lowlands near the sea-coast of Tenasserim there is a large tree of which canoes are occasionally made, and which is much used for sandals. The wood is red, but turns black on being annointed with petroleum.

L

Labrador Stone, a beautiful stone brought from the coast of Labrador. Its colour is commonly of a light or of a deep grey, frequently blackish; but, when held in certain positions to the light, it exhibits varieties of external colours, chiefly shades of blue and green, seldom yellow, in some parts of a copper red and violet. These colours have for the most part a flaky or spotted appearance, but sometimes they lie in stripes. This stone is found of an angular form, in large pieces. It agrees in some respects with the feldtspur, but is softer.

Lac, or **Lakh**, in India signifies 100,000. A lac of rupees, at 2s. per rupee=£10,000.

Lac, or **Gum-Lac** [Ger. *Lac*, Fr. *Lacque*], is the product of an insect which deposits its eggs on the branches of a tree called Bilias, in Assam, to save them from injury and afford food for the maggot in a more advanced stage. It is formed into cells, finished with as much art and regularity as a honeycomb, but differently arranged. This product is collected twice a year, in February and August. To purify it, it is broken into small pieces, and put into a canvas bag of about four feet long, and not above six inches in circumference. The bag is placed over a fire, and frequently turned till the lac is liquid enough to pass through its pores. When taken off the fire, it is twisted into different forms or made into cakes. Lac possesses the properties of a resin, and is the basis of many varnishes, and of the finest kinds of sealing wax. It is known as *stick lac* when in its natural state: it is then of a reddish colour. *Seed lac* is purified stick lac. *Lump lac* is the deposit formed into cakes. *Shell lac* is the substance freed from impurities, and transparent. The most valuable is that of a bright orange colour.

Lac Dye, **Lac Lake**, are the colouring matter of stick lac, prepared and used as red dyes.

Lace [Ger. *Spitzen*, Fr. *Dentelle*] is a texture composed of many threads of linen or silk, which are interwoven and worked from bobbins, according to the patterns designed. Lace thread is of various kinds, denominated either from the place where it is manufactured or from the particular method of working, such as Point, Brussels, or Flanders lace. The manufacture of this article is carried on in several of the Midland counties, where it has been brought to great perfection; and on the Continent, at Brussels and Mechlin, in Belgium, and Valenciennes, Alençon, Caen, and Bayeux in the North of France.

Lamp-Black [Ger. *Kienruss*, Du. *Zwartsel*, Da. *Kimrög*, Sw. *Kimrök*, Fr. *Noir de fumée*, It. *Nero di fumo*, *Negrofumo*, Sp. *Negro de bumo*, Port. *Ferrugem da chamminé*, Rus. *Sasha*, Pol. *Sadz*, Lat. *Fuligo*]. There are two kinds in common use: the best is that procured either from the burnings of the wood of the pine and other resinous trees, or by the methods pointed out in a previous article; the inferior kind is a heavy black prepared from bones by calcining them in close vessels.

Lance-Wood, the timber of a tree found in the West Indies, highly valued for its strength, elasticity, and lightness. It is used for shafts to carriages principally.

Land, in the sea-language, makes part of several compound terms; thus *land-laid* or to lay the land, is just to lose sight of it. *Land-locked*, is when the land lies all round the ship, so that no point of the compass is open to the sea: if a ship is at anchor in such a place, she is said to ride land-locked, and is therefore concluded to ride safe from the violence of the winds and tides. *Land-mark*, any mountain, rock, steeple, tree, &c., that may serve to make the land known at sea. *Land is shut in*, a term used to signify that another point of land hinders the sight of that the ship came from. *Land-to*, or the ship lies land-to, that is, she is so far from shore that it can only be just discerned. *Land-turn* is a wind that in almost all hot countries blows at certain times from the shore in the night. To *set the land*, that is, to see by the compass how it bears.

Land-Carriage is the conveyance of goods and merchandise in waggons, coaches, carts, &c., by land, in contradistinction to conveying them by water, which is called water-carriage.

Land-Waiter, an officer of the custom-house, whose duty it is, upon landing any merchandise, to taste, weigh, measure, or otherwise examine the various articles, &c., and to take an account of the same. They are likewise styled searchers, and are to attend and join with the patent searchers in the execution of all dockets for the shipping of goods to be exported to foreign parts; and, in cases where drawbacks or bounties are to be paid to the merchant on the exportation of any goods, they, as well as the patent-searchers, are to certify the shipping thereof on the debentures.

Lapis Lazuli, a sort of stone from which that celebrated colour, *ultramarine*, is made. It is found in many parts of the world, but that of Asia and Africa is much superior to that of Germany. It is to be chosen heavy, of a fine, close texture, and of a deep indigo blue colour, with a little white matter about it, and with as few of the ornamental gold-coloured veins in it as possible, and such as, when put into the fire, calcines without emitting any smell.

Larboard, among seamen, the left hand side of the ship when you stand with your face towards the head.

Lard, *Hogs'* [Ger. *Schweineschmalz*, Du.

Reuzel, Da. *Svineister*, Sw. *Svinister*, Fr. *Saindoux*, It. *Sugna di porco*, Sp. *Manteca de puerco*, Port. *Manteiga, Unto ou Banha de porco*, Rus. *Swinoe saloe*, Pol. *Sadlo swine*, Lat. *Axungia porci*], the fat of swine melted; it is chiefly used in pharmacy, in the composition of plasters, pills, &c., or for culinary purposes. Large quantities of this article are imported from Ireland, and sent from that country to different parts of the world, especially to Spain and Portugal, where it is used as a substitute for butter.

Larres, money used in the Maldives, of which five are equal to a dollar, or 4*s*. 6*d*. sterling.

Lastings, a woollen fabric used in making light shoes.

Latches [*door-latches*—Ger. *Thurklinken*, Du. *Klinken, Deurklinken*, Da. *Dörklinker*, Sw. *Klinkor*, Fr. *Loquets*, It. *Saliscendi*, Sp. *Pasadores*, Port. *Linguetas*], catches of doors made of iron, and usually japanned over, to keep them from rust. They are manufactured at Birmingham, Walsall, Wolverhampton, and in the vicinities of these towns.

Lath [*Laths*—Ger. and Du. *Latten*, Da. *Legter*, Sw. *Läcster*, Fr. *Lattes*, It. *Gorrenti*, Sp. *Latas, Ripias*, Port. *Ripas*, Rus. *Slegü*, Pol. *Laty*], in building, a long thin, and narrow slip of wood, nailed to the rafters of a roof or ceiling, in order to sustain the covering. Laths are distinguished into three kinds, according to the different kinds of wood of which they are made, viz. heart of oak, sap, and deal-laths; of which the two last are used for ceilings and partitions, and the first for tiling only. Laths are also distinguished according to their length, into five, four, and three-feet laths.

Latitude, the distance of any place from the equator, measured upon the meridian in degrees, minutes, and seconds; all places lying under the equator are said to have no latitude, and all others to have north or south latitude, according to their situation with respect to the equator. The complement of latitude is the difference between the latitude itself and 90°, or as much as the place itself is distant from the pole; and this complement is always equal to the elevation of the equator above the horizon of the place. The elevation of the pole of any place is equal to the latitude itself.

Laudanum, in pharmacy, a name given to divers preparations of opium, chiefly in a liquid form.

Launch, in the sea language, signifies to put out; as, "launch the ship," that is, put her out of the dock; "launch aft," or "forward," speaking of things that are stowed in the hold, is put them more forward; "launch, ho!" is a term used when a yard is hoisted high enough, signifying hoist no more.

Lawn [Ger., Du., Sw. and Fr. *Linon*, Da. *Sindal, Linon*. It. *Linone, Rensa*, Sp. *Cambray clarin*, Port. *Cambraia transparente*], a sort of clear or open worked cambric, which formerly was exclusively manufactured in France and Flanders. The lawn manufacture is established in Scotland and in the North of Ireland, where articles of this kind are brought to such a degree of perfection as nearly to rival the productions of the French and Flemish manufactories. In the manufacture of lawns, finer flaxen thread is used than in that of cambric.

Lazzaretto, a name given to those buildings common in the Mediterranean ports, in which passengers, crews of ships, and goods are placed on their arrival from a plague-stricken port.

Lead [Ger. *Blei*, Fr. *Plomb*] is of a dull white, inclining to a blue colour, and although the least ductile and sonorous, it is the heaviest of metallic bodies, excepting mercury, gold and platina. *Spec. gr.*, when condensed by rolling, 11·44, otherwise 11·35. More than half the product of Europe has been supplied by this country. The lead mines are, therefore, of great importance. The most productive are those of the northern counties South and North Wales, Devon, and Cornwall. The other mines are in Snafield, in Isle of Man, and at Leadhills, in Scotland. The sulphuret of galena furnishes nearly all the lead of commerce. This is a compound of one atom of lead and one of sulphur, consequently yielding, when pure, 86·55 of lead and 13·45 of sulphur in 100 parts. Its hardness is 2·5 — 2·75; sp. gr. 7·25 — 7·7. The one, when first taken from the mine, is washed and picked, and afterwards roasted, to separate the sulphur from the lead. It is then placed in the smelting furnace, whence it runs off into moulds, when tapped, and becomes *pig lead*. The produce of the United Kingdom is estimated at about 70,000 tons a year, the value of which is about £1,370,000. Spain follows as the next largest producing country in the world. Catalonia, Granada, and Murcia have productive mines, and also the district above the town of Canjayar. The production of Spain has reached 30,000 tons a year. The mines in Silesia and the Rhine Provinces produce about 7,000 tons. The Hartz Mountains, more especially near Clausthal, in the Upper Hartz, are believed to produce about 5,000 tons. In the Andreasberg group of veins is that known as the Samson vein, on which is the deepest mine now worked. Rich collections of ore, found at a depth of about 2,100 feet, led to the workings being continued to a depth of 2,520 feet. The annual produce of Saxony is said to be 2,000 tons. Lead is extracted, in comparatively unimportant quantities, in nearly all other European countries, but the product of none besides those named is estimated to amount to more than 1,000 tons, except those of Austrian Illyria whose production is set down at about 3,000 tons. *Manufactured articles*. Lead is principally used for making *sheets*, *pipes*, and shot. In making *sheets*, the metal is cast in a plate, six or seven inches square, and six inches thick, and, when cooled enough to admit of its being moved, is lifted by a crane and placed upon the bench called the rolling mill, the floor of which, 8 feet wide, and 70 to 80 feet long, is made of wooden rollers, arranged parallel to each other, and across the length of the bench. In the centre of the bench are two iron cylinders, 16 inches or more in diameter, one above the other, the top of the lower one level with the top of the wooden rollers. The plate is immediately run through the rollers, and the motion being then reversed, it is passed back, and thus it is kept going, the rollers being gradually brought nearer together. When the sheet becomes inconveniently long, it is cut in two. In passing through from 200 to 300 times the length may be increased from 6 to 7 feet to 400 feet, the breadth being 7 feet. *Lead pipe* is now made by using a hydrostatic press to force the melted lead through dies of the required sizes. *Lead shot* is made by running the metal into bars, and allowing it to pour afterwards, in a molten state, through either hollow hemispherical iron discs or rectangular flat sheets, each one perforated with a set of holes of uniform size, made perfectly smooth and exact. Through these holes the shot falls into a cistern, whence they are taken, dried and assorted, according to their sizes. The shot receives its superficial finish by being left for some time in a rotating cylinder with some pulverized graphite.

LEAK, among seamen, is a hole in the ship, through which the water comes in. To spring a leak is said of a ship that begins to leak; to stop a leak is to fill it with a plug wrapped in oakum, and well tarred; or putting in a tarpaulin clout, to keep the water out; or nailing a piece of sheet-lead upon the place.

LEATHER [Ger. *Leder*, Du. *Leder*, Da. *Læder*, Sw. *Lader*, Fr. *Cuir*, It. *Cuojo*, Sp. *Cuero*, Port. *Couro*, *Coiro*, Rus. *Kosha*, Pol. *Rzemien*, Lat. *Corium*], the skins of various quadrupeds dressed in a particular manner for the use of manufacturers, whose business it is to make them up, according to their different employments. The butcher and others who flay them off the carcases dispose of them raw or salted to the tanner and tawyer; they to the chamois, morocco, and other kinds of leather-dressers, who prepare them according to their respective arts, in order to vend them amongst the curriers, glovers, harness-makers, shoemakers, bookbinders, and all in any way concerned in this article. Leather has divers names according to the state in which it is, and according to the different sorts of skins whereof it is prepared, and its peculiar qualities when so prepared. The three principal assortments of leather are tanned or tawed, oil and alum leather; thus denominated from the different processes pursued in the preparation of the article. Next to wool, the leather trade forms one of the largest industries connected with annual products in the United Kingdom. In 1869 the foreign imports of hides, skins, &c., exceeded in value 4½ millions sterling, and the annual value of hides from home-slaughtered animals is estimated at £5,787,500.

LEDGER is the principal book of accounts kept by merchants and tradesmen, wherein every person's account is placed by itself, after being extracted from the journal. [*See* BOOK-KEEPING.]

LEDGES, in a ship, are small pieces of timber lying athwart from the water-trees to the roof-trees; they serve to bear up the gratings or nettings over the half-deck.

LEE, in the sea language, a word of various significations, though it is generally understood to mean the part opposite to the wind. Thus lee-shore is that shore against which the wind blows. "Lee-latch," or "have a care of the lee-latch," is, take care that the ship do not go to the leeward, or too near the shore; "a-lee the helm," put it to the leeward side of the ship: "to lie by the lee," or, "to come up to the lee," is to bring the ship so that all her sails may lie flat against her mast and shrouds, and that the wind may come right upon her broadside.

LEECH, a fat, slimy, red-blooded, smooth bodied, footless annelid, generally inhabiting stagnant waters. Leeches afford the least painful, and in many cases the only practicable, means of local depletion. The Swedish leeches are considered the best.

LEE-FANG is a rope reeved into the cringles of the courses, to hale in the bottom of the sail, that the bonnets may be laced on, or the sail taken in.

LEES, the grossest part of wine, oil, &c., being the sediment found at the bottom of the vessel. An article for the dyer's use, and those who whiten pins, clock-faces, &c., use a wash made of the lees of wine.

LEETCH-LINES, small ropes made fast to the leetch of the topsails, to which they belong, and reeved into a block at the yard close by the topsail-ties. They serve to hale in the leetch of the sail when the topsails are to be taken in.

LEE-WAY is the angle that the rhumb line upon which the ship endeavours to sail makes upon the rhumb upon which she really sails.

LEMONS [Ger. *Limonen*, Du. *Limoenen*, Da. *Limoner*, Sw. *Lemoner*, Fr. *Limons*, *Citrons*, It. *Limoni*, Sp. *Limones*, Port. *Limões*, Rus. *Limonŭ*, Pol. *Limonŭ*, Lat. *Citrea mala*], the fruit of the lemon-tree, growing in great abundance in Spain and Portugal, whence we import them, packed in chests and boxes. The ports of Lisbon and Malaga are the principal shipping-places of lemons. The shipping of fruit from these places commences about the middle of September, and continues until the February following, after which time the articles become scarce and dear. The lemon-tree is a native of Media and Assyria, and thrives extremely well in warm climates. Besides the two countries already mentioned, this tree is cultivated in other parts of Europe—namely, in Italy, Provence, Languedoc, and other parts of the South of France. The varieties of the lemon are the lemon-tree with sour fruit; with sweetish fruit; with very large fruit, called Imperial lemon; with pear-shaped fruit; with furrowed fruit; with clustered fruit; with childing fruit; with whitish fruit; with tricolor striped fruit; with silver striped leaves, and with double flowers. The lemons of the Bermuda Islands are remarkably large, and their flavour is delicious. Formerly the English consumed great quantities, but for some years past they have rarely been met with in our markets. Sicily produces abundance, which are exported in vast quantities to London, Hamburg, Russia, Germany, and France. The island of Zante abounds in lemons of a very large size. The rind of this fruit is uncommonly smooth, and it contains abundance of excellent acid juice.

LEOPARD-SKINS [Ger. *Leopardenfelle*, Du. *Luipaardvellen*, Da. *Leopardskind*, Sw. *Leopardskinn*, Fr. *Peaux de Leopard*, It. *Pelli di Leopardo*, Sp. *Pieles de Leopardo*, Port. *Pelle de Leopardo*]. The leopard is distinguished from the panther by its paler yellow colour, its smaller size, and the somewhat closer disposition of its spots. The leopard is a native of Senegal and Guinea, as well as of many other parts of Africa; it also occurs in Persia, India, China, and several other parts of Asia. A variety of this species, of a dusky black, marked with spots of a deeper or more glossy black, is found in Bengal. The black skins are the most esteemed. Leopard-skins are principally employed as furniture for war-horses, &c.

LEVANTINE, a silken fabric, woven in a stout, compact twill.

LIABILITIES, all the pecuniary obligations of a person or corporation.

LIBRA, a pound in weight, in Latin, Spanish, and Italian.

LICENCE, in law, is defined as a permission. Thus, a permission to go upon the land or enter the house of him who gives it; the permission granted by a State to its citizens to sell certain wares, or exercise certain callings. The most common and important of these are licences to keep a tavern to sell spirituous liquors, to peddle out goods, to sell by auction, and the like. These licences are issued by the Boards of Excise and Stamps. For an auctioneer's licence a duty is paid of £10; an appraiser's, £8; distiller's, £10 10*s*.; spirit dealer's, £10 10*s*. Additional to retail foreign liquors, £2 2*s*.; to retail in bottles, £3 3*s*. Spirit retailer's licence, publicans, £2 4*s*. 1*d*. to £11 0*s*. 6*d*. Beer dealers, wholesale, £3 6*s*. 1½*d*. Additional retail licence, £1 2*s*. 0½*d*. A list of the trades that cannot be carried on without Excise licences can be had from any Inland Revenue Office.

LIEN, a claim or attachment to any property which a person has in his possession, for a debt due to him from the owner of the property.

LIME or LINDEN-TREE [Ger. and Du. *Linde*, Da. *Lindetrae*, Sw. *Lind*, Fr. *Tilleul*, It. *Tiglio*, Sp. *Tilo*, *Tila*, *Tilon*, Port. *Til*, Rus. and Pol. *Lipa*, Lat. *Tilia*]. There are four species—the *Europea*, *Americana pubescens*, and *Alba*. The *Europea*, or common lime-tree, is generally supposed to be a native of Britain, imported into England before the year 1652. The wood is light, smooth, and of a spongy texture, used for making lasts and tables for shoemakers, curriers, &c. Ropes and bandages are made of the bark, and mats and rustic garments of the inner rind, in Carniola and some other countries. It is said that the linen cordage made in some parts of Russia is so remarkably strong and elastic that in this respect it is superior to iron chains. The lime-tree contains a gummy juice, which, being repeatedly boiled and clarified, produces a substance like sugar.

LIMES, a species of lemon, which grows in abundance in most of the West India islands. The lime is much smaller than the lemon, its rind is usually thinner, and its colour, when the fruit arrives at a perfect state of maturity, is a fine, bright yellow. It is uncommonly juicy, and the flavour of its substance is esteemed far superior to that of the lemon.

LINEN [Ger. *Linnen*, Fr. *Toile*, It. *Tela*] cloth is chiefly made of hemp and flax. The species of goods that come under the denomination of linen are table-cloths, plain and damasked, cambric, lawn-shirting, sheeting, towelling, &c.; Silesias, Osnaburghs, &c. The chief countries in which linens are manufactured are Russia, Germany, Switzerland, Belgium, Holland, Scotland, and Ireland. In the north of Ireland, as it is in the neighbourhood of Dundee, in Scotland, the linen industry takes the lead of all others. Russia makes sheeting and sail-cloth principally; Switzerland both fine and coarse goods; Germany, shirting, sheeting, and bagging; Belgium and Holland produce exceeding fine descriptions of the finer goods.

LING, *gadus malva*, a species of cod-fish. Vast quantities of this fish are salted for exportation, as well as for home consumption. When it is cut or split for curing it must measure 26 inches or upwards from the shoulder to the tail; if less than that, it is not reckoned a sizeable fish, and consequently not entitled to the bounty on exportation. Ling is an inhabitant of the northern seas, and forms in many places a considerable article of commerce. Large quantities of this fish come to us from the Shetland and Orkney Isles, from Russia, Ireland, and from the northern parts of Scotland.

LINGET, a small mass of metal.

LINSEED-OIL [Ger. *Leinöl*, Du. *Lynöli*. Da. *Linolie*, *Hörrolie*, Sw. *Linolja*, Fr. *Huile de Lin*, It. *Olio di Lino*, Sp. *Aceite de Linaza*, Port. *Oleo de Limbaça*, Rus. *Lejanoe Masslo*, Pol. *Oley Lniany*, Lat. *Oleum Lini*]. This oil is procured by expression from the linseed; on account of a mucilage that resides in the shell, the quantity obtained is comparatively small; and as the cold-drawn oil is not so fit for many purposes as that which is drawn hot, the following method is taken to destroy the mucilage before the application of the press: an iron vessel, like a sand bath, capable of containing some bushels, is fixed in a furnace. It is then filled with the seed, and heated by a moderate fire. Care must be taken to stir up its contents frequently, that every part may be equally roasted; at first there arises an abundance of aqueous vapour, which, as the heat is increased, is followed by dense blackish fumes, of a very nauseous odour. The roasting being completed, the paste is subjected to the operation of the mill. The cold-drawn oil has a rich yellow colour, is very unctuous and unpleasant both to the taste and smell; by exposure to the air and light it becomes dry. The hot-drawn oil is of a rich yellowish red or deep wine colour, and is more nauseous than the former.

LION-SKINS [Ger. *Löwenhaüten*, Du. *Leeuwenhuiden*, Da. *Lövekuder*, Sw. *Lejoubudar*, Fr. *Peaux de Lion*, It. *Pelle di Leone*, Sp. *Pieles de Leon*, Port. *Pelles de Leno*, Rus. *Lewowaja Kosbi*, Lat. *Leonis Pelles*]. The general colour of the lion's skin is pale tawny, still paler or more inclining to white beneath. The upper part of the head, the neck, and the shoulders of the animal are coated with long shaggy hair, forming a pendent mane; on the body the hair is short and smooth, and the tail is terminated by a tuft of blackish hair. The lioness is destitute of the mane, and is whiter beneath than the male. The lion is principally an inhabitant of Africa, but is also found, though far less numerous, in the hotter regions of Asia.

LIQUORICE-JUICE, SPANISH-JUICE, or LIQUORICE-BALL [Ger. *Lakritzensaft*, *Spanischer Saft*, Du. *Drop*, Da. *Lackrisaft*, Sw. *Lackrits*, Fr *Suc or Jus de Reglisse*, *Reglisse Noir*, It. *Sugo di Regolizia*, Sp. *Regaliz en bollos o' Pastillas*, Port. *Succo de alcacuz*, Rus. *Solodkowoi Sok*, Pol. *Lakrycya*, Lat. *Succus Liquoritiæ*], the inspissated juice of the common liquorice-root, is brought to us in rolls or cakes, usually covered with bay-leaves, from Spain and Holland. It is to be chosen firm but not tough, hard, and, when broken, of a fine shining surface, such as perfectly melts in the mouth, and does not taste of burning, nor leaves any harsh or gritty particles between the teeth.

LITHARGE [Ger. *Glötte*, *Glätte*, Du. *Gelit*, Da. *Glöd*, Sw. *Glitt*, *Glette*, Fr. *Litharge*, It. *Litargirio*, Sp. *Almartaga*, *Litarjirio*, Port. *Almartaga*, *Lithargirio*, Rus. *Glet*, Pol. *Gleyte*, *Glete*, Lat. *Lythargyrium*], a subcarbonate of lead in an imperfect state of vitrification. When silver is refined by cupellation with lead, this latter metal, which is scorified, and causes the scorification of the imperfect metals alloyed with the silver, is transformed into a matter composed of small, semitransparent, shining plates, resembling mica, which is litharge. Litharge is more or less white or red, according to the metals with which the silver was alloyed. The white is called litharge of silver, and the red has been, improperly, called litharge of gold.

LITHMAS, a violet-blue dye employed in Holland to sham marble.

LITRE, a French measure of capacity=1¾ imp. pint.

LLOYDS, the name of subscription rooms on the first floor of the London Exchange, where merchants, shippers, and writers attend to obtain shipping intelligence and transact the business of marine insurance. One large room, with small rooms attached to it, is occupied by the underwriters, the object of whose association is to limit the interest of every individual underwriter to a moderate amount, say £50, £100, or £150, rarely exceeding £200; so that in the event of casualties the loss, instead of falling upon one is divided among hundreds. A candidate must be proposed by six members before he can become a subscriber to the institution.

LOADSTONE [Ger. and Sw., *Magnet*, *Fretimant*]. The ores in which the iron contains the least oxygen without being engaged in other combinations form natural magnets and the loadstones of commerce, which are found in considerable masses in Germany, Sweden, Norway, Spain, Italy, &c. This singular substance was known to the ancients; and they had remarked its peculiar property of attracting iron, though it does not appear they were acquainted with the wonderful property which it also has of turning to the pole when suspended and left at liberty to move freely. Upon this remarkable circumstance the mariner's compass depends; an instrument which gives us such infinite advantages over the ancients.

LOCK, [Ger. *Schlösser*, Du. *Sloten*, Da. *Laase*, Sw. *Lås*, Fr. *Serrures*, It. *Serrature*, Sp. *Cerraduras*, *Cerrajos*, Port. *Fechaduras*, Rus. *Samki*, Pol. *Zamki*], a well known instrument, reckoned the masterpiece in smithery, a great deal of art and delicacy being required in contriving and varying the wards, springs, bolts, &c., and adjusting them to the places were they are to be used, and to the various occasions of using them. From the various structure of locks, accommodated to their different intentions, they acquire various names. Those placed on outer doors are called stock-locks; those in chamber-doors spring-locks; those on trunks, trunk-locks, padlocks, &c. Of these the spring-lock is the most considerable, both for its frequency and the curiosity of its structure.

LOGWOOD. [Ger. *Blauholz*, *Campeschehols*, Du. *Kampechehout*, Da. *Blaaholt*, *Campeschetræe*, Sw. *Campeschetrå*, Fr. *Bois de Campeche*, It *Campeggio*, *Legno Tauro*, Sp. *Palo de Campeche*, Port. *Pão de Campeche*, Rus. *Kampetschkoed erewo*, Pol. *Kampeszu*, Lat. *Lignum Campechense*.] This wood is likewise called India, Jamaica, and Campeachy wood, from the places where it grows most plentifully. It is very common in Jamaica, and on the eastern shore of the bay of Campeachy; it is found also at St. Croix, Martinico, and Granada. The great consumption of logwood is for blacks in dyeing, to which it gives a lustre and velvety cast, and for greys of certain shades. It is also of very extensive use for the different compound colours, which it would be difficult to obtain of equal beauty and variety by means of drugs affording a shade permanent dye. Juice of logwood is frequently mixed with that of Brazil, to render colours deeper; their proportions being varied according to the shade desired. Logwood is used for dyeing silk violet. For this the silk must be scowered, alumed, and washed. To dye silk thus, it must be turned in a cold decoction of logwood, till it has acquired the proper colour. Bergman has observed that a fine violet might be produced from logwood by impregnating the silk with solution of tin. In fact, we may thus obtain, particularly by mixing logwood and Brazil in different proportions, a great number of fine shades, more or less inclined to red, from lilac to violet.

LONGITUDE, in navigation, the distance of a ship or place, east or west, from another, reckoned in degrees of the equator.

LOXODROMIC. The art of oblique sailing by the rhomb, which always makes an equal angle with every meridian: that is when you sail neither directly under the equator nor under one and the same meridian, but across them.

LYNX-SKINS [Ger. *Luchsfelle*, Du. *Losvellen*, Da. *Losskind*, Sw. *Loskinn*, Fr. *Peaux de lynx ou de loup cervier*, It. *Pelli di Lince*, Sp. *Pieles de Lince ou de Lobos cervales*, Port. *Pelles de Lince ò de Lobo cerval*], are of a grey colour, more or less approaching to a black, according to the climate which the animal inhabits. The darkest shade is on the back, and the hue becomes gradually lighter downwards to the belly, which is white, and marked with black spots, as are the other parts on the skin. The hair is longest on the belly, and is, therefore, most frequently employed by furriers in the manufacture of muffs. Lynxes are common in Sweden, Russia, Poland, and upon the Alps; those which inhabit the latter are not very dissimilar to the others, but their fur is less soft and beautiful. These animals are likewise to be met with in most parts of North America. Those of Canada and the neighbouring districts are of a very deep grey colour; but such as inhabit the vicinity of Hudson's Bay are almost white, on which account their skins are highly valued.

M

MACCARONI, a wheaten paste formed into long, slender, hollow tubes, and used in soups, &c. It is the same substance as vermicelli, the only difference consisting in the latter being made into thinner and smaller tubes.

MACE, a thin, flat, branching membranous substance, enveloping the nutmeg, of a lively reddish yellow, a pleasant aromatic smell, and a warm, bitterish, pungent taste. It is imported from Singapore, Batavia, and the Banda Islands.

MACAO is a free port and settlement of the Portuguese in China, in *lat.* 22° 12′ N., *long.* 113° 34′ E. on the west side of the Canton river, 80 miles S.S.E. of Canton. *Pop.* 57,000 Chinese, and 4,000 Eurasians. The trade of Macao was formerly restricted to the Portuguese and Spanish shipping, but now it is chiefly English and American. The settlement has no export product itself. It was granted to the Portuguese subject to an annual rent, in 1856, by the Chinese Government. The payment of this tribute was afterwards rescinded.

MACKAREL [Ger. *Makrelen*, Du. *Macreelen*, Da. *Makrel*, Sw. *Makrill*, Fr. *Maquereaux*, It. *Macarelli*, Sp. *Escombros*, *Sardas*, Port. *Sardas Escombros*, Lat. *Scombri*]. This fish is a native of the European and American seas, generally appearing at stated seasons, and swarming in vast shoals, round particular coasts. Its great resort seems to be within the Arctic circle, where it resides in innumerable troops, grows to a larger size than elsewhere, and is supposed to find its favourite food, consisting chiefly of marine insects, in far greater plenty than in warmer latitudes.

MADAGASCAR. The largest and most important of the African islands, situated in the Indian Ocean, between *lat.* 12° and 25° 40′ S., and *long.* 43° 10′ and 50° 30′ E., separated from Africa by the Mozambique Channel. Average breadth, 250 miles. *Area*, estimated at 240,000 square miles. *Pop.* about 5,000,000. *Harbours, &c.* The sea-coast contains many excellent harbours, among which are Diego Saurey Bay, or British Sound, near the N.E. end of the island, and Port Loquez, Antongil Bay, and St. Luce Bay on the E. coast. The most frequented ports on the E. coast are Tamatave and Foule Points; but they are only open roadsteads, protected from the surf by coral reefs. On the west coast are St. Augustine's Bay, Folia Bay, Borang, Bambetoka, Majambo, Nareeuda, Pasandava, and Chunpay Kee. The most frequented of these are St. Augustine's and Bambetoka. The hills between the sea coast and the interior seem to consist of primary rocks; gneiss, granite, and quartz are found, and also basalt and large beds of clay. Excellent corn abounds in the interior. Coal is found in the northern parts, and copper and other metals are said to exist. A great part of the island is covered with dense forests, abounding with valuable timber, suitable for ship-building, carpentry, and cabinet work. *Productions.* Rice, tobacco, sugar, cotton, indigo, and various spices; also tropical fruits of all kinds.

MADDER [Ger. *Krapp*, Fr. *Gerance*]. There are several species, of which the most remarkable is the *tinctorum* or dyer's madder, so much used by dyers and calico printers. The fine quality of madder is distinguished by its being of a bright, lively colour, well ground, without any coarse parts proceeding from the peelings. Fresh is always more valuable than old madder. It should be kept close to prevent the access of air, as its virtue evaporates when exposed. It is cultivated principally in Holland, Germany, and France, especially the former, where it grows in greater abundance than in any other part of the world. The *rubia peregrina*, or Turkey madder root, likewise called *alizari*, is principally cultivated about Smyrna. This plant may be propagated either by offsets or seeds. On a light soil the culture cannot be carried on to any profit; the soil in which the plant thrives best is a rich, sandy loam, three feet or more in depth. The principal use of madder is in dyeing. It gives out its colour both to water and rectified spirit; the watery tincture is of a dark, dull red; the spirituous of a deep bright one. It imparts to woollen cloth a very durable red dye. Sometimes its dye is heightened by the addition of Brazil-wood, and sometimes it is employed in conjunction with cochineal for demi scarlets and demi crimsons.

MADRAS, *Presidency of*, so called after its chief city, which is the seat of government. Next to the island of Bombay, Fort St. George was the earliest acquired of the three factories which formed the nucleus of the present empire of the British in India. For some time it continued to be the most important of the three presidency towns until the battle of Plassey gave the English the rich province of Bengal, and a superior position in that quarter than could be maintained at Madras. The presidency extends from Cape Comorin in *Lat.* 8° 4′ to the northern extremity of the district of Ganjam in *Lat.* 20° 18′, and from 74° 40′ to 85° 15′ E. *Long.* Its greatest length is about 950 miles, and its greatest breadth, in a westerly direction from the city, is about 450 miles. Towards the N W. it joins the Bombay Presidency; on the N. it is bounded by the Nizam's dominions and the Central provinces; and to the extreme N.E. it joins the lower provinces of Bengal. Its eastern or Coromandel coast is washed by the waters of the Bay of Bengal, and its western or Malabar coast by the Arabian Sea. *Shipping Accommodation.* The only harbours worth mentioning on the Malabar coast are those of Cochin and Mangalore; the former, which has the greatest depth of water, is closed during the prevalence of the S.W. monsoon for several months; the latter admits with safety vessels drawing 10 to 12 feet of water only. Small havens and creeks, however, are very numerous along this coast; they are generally estuaries from streams flowing down from the Western Ghauts, a continuation of the same range of hills that run the whole length of Bombay. From Cape Comorin towards the N.E. the coast is but little frequented for about 166 miles, the navigation being impeded by a bank known as Adam's bridge, which connects the island of Ceylon with the mainland of India. Tuticoria in Tinnevelly district is an excellent roadstead or haven, affording shelter to ships throughout the year. The places principally frequented by shipping are Negapatam, Nagore, Tranquebar, Cuddolori, Pondicherry, Ladras, Madras, and Pulicat. Vizagapatam, Bimlipatam, Chicacole, and Ganjam are the chief maritime places along the coast. *Area* 141,746 square miles; *Population* 26,089,052. Of the latter number 24,172,822 are Hindoos, 1,502,134 Mohamedans, and 414,096 Christians. *Languages.* The principal dialects of Southern India are Teloogoo or Julu, Tamil, Canarese, Malayalu; Oordoo or Hindustanee is also spoken, being the common language of the Mahomedans throughout India. *Administration.* The presidency is divided into five parts, called the Ceded Districts, Malabar, North Carnatic, South Carnatic, and the Northern Circars. These are sub-divided into twenty districts, including the city of Madras, under the regulation system, and two non-regulation districts, Ganjam and Vizagapatam. *Products.* The most valuable natural product consists of ship timber, which abounds in the forests of Malabar, Travancore, and Canara, such as teak and peon. Sandal-wood is also supplied to the Chinese market. Of dry crops, there are ragi, maize, millet, oil-seeds, pulse, yams, and plantains. The cocoa-nut and Palmyra palms are largely cultivated on the sandy alluvial tracts; the former for the wood and cordage which it furnishes, and the latter for its sap, which, after distillation, forms an intoxicating beverage. The other principal articles grown are sugar, indigo, tobacco, spices, and cotton. The area under cotton cultivation was 1,305,702 acres in 1868–69, against 1,466,372 in 1867–68, or a decrease of 160,652 acres. Carolina rice promises to be an important addition to the products of the country. The cultivation of cinchona is carried on in the Neilgherries successfully, and a few useful additions have been made to the forests of these hills. *Imports and Exports.* Imports, 1867–68, £5,082,757; 1868–69, £5,140,061; increase, £57,305. Exports in 1867–68, £5,800,923; in 1868–69, £7,675,099; increase, £1,874,176. The value of the cotton-wool exported was £2,139,982, or £900,000 more than in 1867–68; indigo exports rose from £431,500 to £610,355; coffee from £805,433 to £1,066,522; seeds from £342,673 to £506,659; in no article was there an important decrease. The increase under imports was chiefly in the articles of twist, cotton, piece-goods, and rice; there was a large decrease in the value of railway stores imported. In 1857–58 the imports of merchandize were valued at £2,468,545, and the exports at £4,036,516; so that in the twelve years ending with that under review, the first have more than doubled, while the exports have increased by more than seven-eighths. *Madras*, the chief city of the presidency, and the principal emporium of the Coromandel coast, is situated in the Carnatic province, a low, sandy, and somewhat sterile country. It lies close upon the margin of an open roadstead, the shores of which are constantly beaten by heavy and dangerous surf. *Pop.* 720,000. *Foreign trade* is chiefly with Ceylon, Great Britain, the Arabian and Persian Gulf, Mauritius, and Bourbon Island, New South Wales, France, Penang, Singapore, and Malacca. In a commercial point of view Madras occupies a position of considerable inferiority as compared with Calcutta and Bombay. This is to a great extent attributable to want of shipping accommodation. Large vessels are obliged to anchor about 2 miles from the beach, in 9 fathoms of water, and landing is effected by boats called masulahs, built of thin planks, flat bottomed, without ribs or keel, and so flexible as to yield to the impulse of the breakers. *Money.* 1 pie = ⅛*d.*; 12 pie = 1 anna = 1½*d.*; 16 annas = 1 rupee = 2*s.*; 15 rupees = 1 gold rupee = £1 10*s.*; 16 rupees = 1 gold mohur = £1 12*s.*; 100,000 rupees = 1 lakh = £10,000; 100 lakhs = 1 crore = £1,000,000. *Weights.* 10 pagodas = 1 pollum = 1¼ oz. avoir. 3·038 tolas; 8 pollums = 1 seer = ⅝ lb. avoir. 24·304 tolas; 5 seers = 1 viss = 3⅛ lb. avoir. 121·528 tolas; 8 viss = 1 maund = 25 lb. avoir. 972·222 tolas; 20 maund = 1 khandi = 500 lb. avoir. 6·0764 imperial maunds. The Madras maund is 0·303819; British maund, and the British Indian or imperial maund is 3·2914286 Madras maunds; 1 Bombay maund = 1·12 Madras maund, and 1 Madras maund = 0·892857 Bombay maund. The Madras maund is sometimes stated at 30 lb. troy, or 0·3 British Indian maund = to 24·68571143 lb. avoir., which makes the pollum exactly 3 tolas, and the khandi 6 British Indian maunds. *Recognized by Government.* 180 grains = 1 tola = 6·58 drs.; 3 tolas = 1 pollum = 1 oz. 3·75 drs.; 40 pollums = 1 viss = 3 lb. 1 oz. 5·74 drs.; 8 viss = 1 maund = 24 lb. 10 oz. 15·54 drs. *Land Measure.* 1 mannee or ground (60 feet × 40 feet) = 2,400 square feet; 24 grounds = 57,600 square feet, or 1 cawnic; 1 cawnic = 1·322316 acres; 484 cawnics = 1 square mile. *Banks.* The Agra Bank, Bank of Madras, Chartered Mercantile Bank, Oriental Bank Corporation, the National Bank of India.

Mahogany [Ger. *Mahoganiholz*, Fr. *Bois de Mahogani*]. This tree is a native of the warmest parts of America, and grows also in the West Indies. It abounded formerly in the lowlands of Jamaica, but it is now found only on high hills and places difficult of access. It grows tall and straight, rising often 60 feet from the spur to the branches, and is usually four feet in diameter. The foliage is a beautiful deep green, and the appearance made by the whole tree so elegant that none could be more ornamental for an avenue. The flowers are of a reddish or saffron colour, and the fruit of an oval form, about the size of a turkey's egg. Some of these trees have attained to a monstrous size, exceeding 100 feet in height. They have been known to measure twelve feet in diameter. In felling the most beautiful part is commonly left behind. The workmen raise a scaffolding four or five feet above the ground, and hack up the trunk, which they cut into balks. The part beneath extending to the roots is not only of a larger diameter but of a closer texture than the other parts, most elegantly diversified with shades or clouds, or dotted like ermine with black spots, and, moreover, takes the highest polish with singular lustre. This part is only to be come at by digging below the spur to the depth of two or three feet, and cutting it through. The tree thrives in most soils, but varies in texture and grain, according to the nature of the soil. On rocks it is of a smaller size, but very hard and weighty, and of a close grain, beautifully shaded; while the produce of the lower and richer lands is observed to be more light and porous, of a paler colour and open grain; and that of mixed soils to hold a medium between both. This constitutes the difference between the Jamaica wood and that which is collected from the coast of Cuba and the Spanish main.

Mainmast, the chief or middle mast of a ship. It is divided into four unequal sections, viz., the *mainmast* properly so called, which first rises from the deck; the *main-topmast*, immediately rising from the mainmast; the *main-top-gallant mast*, first above the main-topmast; and the *main-royal-mast*, which crowns the whole. The form of the mainmast, like that of other masts, is taper. Each division of the mast has its particular sail, to which it gives name; as the mainsail, main-topsail, &c., and its particular yard, as the main-yard, main-topsail-yard, main-top-gallant-sail-yard, &c., besides its separate head or top, as the main-top, the main-topmast-head, &c. The ropes, tackling, &c., of each section are named in a similar manner.

Maize [Ger. *Mai*, Fr. *Mais*], a kind of Indian corn, much of the same temperament with wheat. The stalk of the maize is joined like the sugar-cane; it is very soft, and full of juice, which is so sweet that a syrup has been made from it. To reduce the grain into flour, it is carefully parched in an oven, pounded, and then sifted.

Malacca, a British territory, extending about 43 miles along the shore of the Malay peninsula, between *Lat.* 2° and 2° 29′ N., and varying in breadth inland from 10 to 28 miles. *Area.* 1,000 sq miles. *Pop.* 67,142. Malacca was occupied by the Portuguese in 1511, and in 1641 was taken from them by the Dutch, who surrendered it to the British in 1795. It was occupied by us till 1818, when it was restored to the Netherlands Government, by whom it was again surrendered to us, in exchange for Benevolen, in 1825. In 1826 it was incorporated with Singapore. *Crops.* Rice, black pepper, the cocoa-palm, and coffee. Here cultivation is progressing steadily, though it is somewhat impeded by the difficulty experienced in getting the land surveyed. *Mining.* Tin-mining was formerly carried on to some extent, and the tenths to which the government is entitled, and which are farmed out to Chinese, have realised as much as £5,000 a-year; but as the operation is confined to surface washing, and the greater part of what was readily accessible in this way has already been collected, deep mining has been almost entirely abandoned. There are large quantities of tin, and probably of other metals, in the alluvial plains, but the difficulty in working them is the fickleness of the native proprietors, who make an engagement one day and break it the next. *Malacca*, cap. of the preceding territory, is situated 45 miles from the opposite coast of Sumatra. *Lat.* 2° 14′ N., *Long.* 102° 12′ E. *Pop.*, about 3,000. The city was at one time the chief emporium of Oriental commerce; now it occupies the third place in the Straits Settlements. *Trade.* The total of the imports and exports for 1864-65 was £821,698; for 1865-66, £826,873; for 1868, £844,453. The trade of the settlement, though small in amount, shows a steady annual increase. *Money.* Accounts are kept in Spanish dollars of 100 cents. *Weights.* The Malay picul of 100 catties = 135 lb. avoir. The coviel = 18¾ imp. inches.

MALACCA CANES are imported from Siak, on the opposite coast of Sumatra. Some of them are simply mottled or clouded, others of a brown colour, in consequence, it is believed, of their having been smoked. The most slender specimens, with the longest internodes, are the most valued.

MALACHITE, green carbonate of copper. This ore is often amorphous, but often crystallized in long slender needles. Its specific gravity is 3.571 to 3.653. It may be easily scratched with a knife. It dissolves with effervescence in nitric acid, and colours the flame of it green. Malachite is susceptible of the finest polish, and is found in masses or stalagmites; of it are made cups, snuff-boxes, trinkets, which look extremely well, as the surface is almost always ornamented with zones of various strongly-marked colours, with succession of the beds or layers that have gradually formed the malachite. It is found in great quantity on the Vosges mountains so called in Lorraine, and in the mines of the Hartz forest in Saxony. The silky green copper ore of this kind from China, where it is found abundantly in the form of solid bundles, is the purest. There is a species of Siberian malachite which is sometimes mixed with calcareous earth and gypsum, and is found in Norway and Siberia.

MALDY, a fabric made at Malda, of a mixture of silk and cotton, very durable, and which washes well. It is exported through Sikkim to the North-West Provinces of India and Thibet.

MALLEABILITY, a property of metals, whereby they are capable of being extended under the hammer. Gold is considered the most malleable of all metals.

MALMSEY WINE [Ger. *Malvasier*, Du. *Malvezeiwyn*, Da. *Malvasier*, Sw. *Malvasirvin*, Fr. *Malvoisie*, It. *Malvagia*, Sp. and Port. *Malvasia*, Rus. *Malwasëja*, Pol. *Malmazya*, Lat. *Vinum malvaticum*]. This designation is generally bestowed upon a luscious, rich species of Madeira wine; several sorts of Spanish sweet wine are, however, likewise denominated malmseys.

MALT. The term malt is applied to designate grain which, being steeped in water, is made to germinate to a certain extent, after which the process is checked by the application of heat. This evolves the saccharine principle of the grain, which is the essence of malt. Rice, and almost every species of grain, has been used in malting; but in Europe, and especially in England, malt is almost entirely prepared from barley. It is the principal ingredient in the manufacture of beer, and is little used except in brewing and the distillation of spirits.—*M'Culloch: Faulkner.*

MALTA. This dependency of Great Britain is situated in the Mediterranean, about fifty-six miles from Sicily. It possesses one of the finest harbours in the world. The soil is artificial, and only eight to ten inches deep. It is cultivated with great care, and yields abundant crops. Fruits, such as oranges, olives, figs, are excellent and abundant. The climate is more like Africa than Europe. Variations are frequent in temperature. The sirocco, which blows in spring and autumn, is debilitating. *Industries.* Stone carving, cabinet work, and jewellery. *Pop.* About 146,852. *Extent*, including Gozo, 115 sq. miles. *Principal town.* Valetta, on the N.E. coast. It is on a narrow neck of land, forming two harbours. The northern is solely appropriated to the purposes of quarantine. The southern, or Grand Port, is commodious and safe. *Pop.*, including the three districts of Cospieu, Vittoriosa, and Senglea, about 150,000. *Imports* consist principally of wheat, barley, oil, wines, cattle, pulse, seeds, Indian corn, spirits, beer, apparel, sugar, linens, iron, coals, coffee, and woollens, value about £6,400,000. *Exports.* Olive oil, ivory, wool, cotton, silk, grains, spirits, wines, pulse, &c., value about £5,250,000. *Money.* The Government keep accounts in sterling, the mercantile classes in scudi of 12 tari each, of 20 grani, 2½ scudi = 1 pezza or Sicilian dollar = 4*s.* 7½*d.* in silver, or 4*s.* 9½*d.* in gold. The dollar is commonly estimated at 4*s.* 2*d.*, and the Maltese scudo = 1*s.* 8*d.* Bills on London are drawn at 30 and 60 days' sight. *Weights and Measures.* The cantaro of 100 rottoli or pounds = 174 lb. avoir. The barile of wine = 9⅛ imp. gall.; the caffisco of oil = 4⅝ imp. gall.; the salma of corn (stricken measure) = 7⅞ imp. bush; the canna of 8 palmi = 82 imp. inches; but 3½ palmi are usually reckoned 1 yard. The salma of land of 16 square tumoli = 4·44 imp. acres. *Banks.* Anglo-Maltese Bank; the Malta Bank.

MANGANESE [Ger. *Braunstein*, Fr. *Manganèse*], a dark grey or brown mineral, long known and used in glass-making, bleaching, &c. When pure it is of a greyish white colour, and has a good deal of brilliancy. Its texture is granular; it has neither taste nor smell; its hardness is equal to that of iron; it combines with many of the metals, and forms with them alloys. It unites very readily with copper, and the compound is very malleable, and of a red colour; it also combines with iron, to which it gives a red colour, and renders it brittle. It is found in abundance in the northern parts of Europe, Germany, France, and in many parts of Scotland. Derbyshire is largely furnished with this mineral. The ore, dug in this country, is known by the name of black wadd, and is remarkable for its spontaneous inflammation with oil.

MANIFEST is a regular list of a ship's cargo, containing the mark and number of each package, the names of the persons by whom the goods are shipped, and those of the persons to whom they are consigned; a specification of the quality of the goods contained in each package—as shirtings, yarns, metals, &c. —and also an account of the freight receivable from the consignees.

MAN, ISLE OF (*Mona* or *Menavia*), an island in the Irish Sea, situated between Cumberland and the N. of Ireland. *Lat.* of the Calf of Man, on which there is a lighthouse, 54° 3′ N.; *Long.* 40° 49′ W. *Area.* 220 sq. miles. *Pop.* 52,469. *Minerals.* Copper, zinc, and lead ores are found—the latter to the extent of about 300 tons annually. Marble, limestone, and greenstone are quarried, but no coal. The herring and other fisheries furnish about £60,000 worth of fish annually. There are about 600 boats and 4,000 men engaged in this industry. *Exports.* Corn, potatoes, eggs, limestone, ore, fish, linens, colonial produce, and manufactured goods. *Port.* Douglas, on the S.E. coast.

MANURE. Manuring land is the act of ameliorating the soil by applying thereto some matter proper for its fertility. Under the term manures may be included chalk, lime, shells, bones, gypsum, marl, clay, sand, pond-mud, pond-weeds, ashes, soot, seaweed, salt, rape-dust, malt-dust, yard-dung, pigeons'-dung, rabbits'-dung, night-soil. Chalk is used to great advantage on some wet, stiff soils, having no calcareous earth. Lime destroys and decomposes weeds when laid on fallows; turf ashes, if spread on poor, chalky, thin land, will seldom fail to produce a good crop of turnips. The effects of bone-dust on the soil are in the highest degree beneficial. Marling on fallows is practised extensively with success. Soot is a valuable manure for a top dressing on sanfoin, clover, and meadow. Seaweed is a very excellent manure, being a mass of vegetable matter strongly impregnated with salt. Rape-dust is also excellent; the large proportion of oily and mucilaginous matter which it contains very materially enriches the soil. *Guano* has long been employed by the farmers to increase the yield of their lands. It comes from the Chincha Islands principally, and has long been supposed to be the excreta of birds. This, it appears, is not the case. The recent researches of Dr. Habel go far to corroborate Professor Edwards's view, that guano is really a stratified deposit. When the portions of guano which are insoluble in acids are examined, they are found to consist entirely of skeletons of diatomaceæ, polycystina, and sponges, all of which are invariably of marine origin, and sometimes identical with those still living in the adjacent ocean. These forms are also found in patches, exactly as they occur in nature. From these and other facts recently obtained by chemical and microscopical investigation, there appears to be but little doubt that guano is an accumulation of the bodies of animals and plants which, either by heat, by chemical action, or both combined, has had its organic matter converted into bitumen, while the mineral constituents have been preserved in those beautiful forms which make up the infusorial strata in various parts of the world.

MAP [*Maps*—Ger. *Landkarten*, Fr. *Cartes Geographiques*], a plane figure representing the surface of the earth, or a part thereof. In maps there are three things essentially necessary. (1.) That all places have the same situation and distance from the great circles therein as on the globe, to show the parallels, longitudes, zones, climates, and other celestial appearances. (2.) That their magnitude be proportionable to their real magnitude on the globe (3.) That all places have the same situation, bearing, and distance as on the earth, &c.

MAPLE [Ger. *Ahorn*, Fr. *Erable*]. The wood of the common maple-tree is much used by turners, being superior to beech. When it abounds in knots it is invaluable for the purpose of inlaying.

MARBLE [Ger. *Marmor*, Fr. *Marbre*, It. *Marmo*]. The colours by which marbles are distinguished are almost innumerable; but the most remarkable are:—(1.) The black marble of Flanders. (2.) Plain yellow. (3.) Yellow, with some white veins. (4.) Yellow, with black dentrites. (5.) Yellow, with brown figures resembling ruins. (6.) Black and yellow. (7.) Black and white. (8.) Pale yellow, with spots of a blackish grey colour. (9.) Yellow, white, and red. (10.) Pale yellow. (11.) Olive colour, with deeper-coloured cross lines and dentrites. (12.) Brownish red. (13.) Flesh-coloured and yellow. (14.) Common red marble. (15.) Crimson, white, and grey. (16.) Reddish-brown lumps on a whitish ground. (17.) Bluish grey. (18.) Snowy-white. The finest solid modern marbles are those of Italy, France, and Flanders. Very beautiful and several kinds of marbles are found in the North of Scotland and in some parts of Ireland. In Derbyshire and Anglesea the productions are highly esteemed. Marble is of so hard, compact, and firm a texture as readily to take a beautiful polish, and is much used in ornaments of buildings, as columns, statues, altars, tombs, chimney-pieces, &c. The marble of Carara is in high repute among sculptors.

MARK *of goods.* A certain mark is affixed to goods, to ascertain their property and quality; and if one person shall use the mark of another, with intent to do him damage, upon an injury being sustained, an action on the case will lie. Certain marks are also affixed, to show where the goods were made, and by whom, and also to denote, in various articles subject to the Excise, whether they were surveyed by the proper officers, &c. The marks put upon packages of goods are always inserted in the margins of the invoice and bill of lading, as well as in the ship's manifest.

MARMOTS [Ger. *Murmelthiere, Marmotten*, Du. *Marmeldier, Marmot*, Da. *Murmeldyr*, Sw. *Mormeldjur*, Fr. *Marmotte*, It. *Marmotta, Montanello, Marmontana, Varosa*, Sp. and Port. *Marmota*, Rus. *Surik*, Lat. *Marmota*], likewise called the Alpine mice, are rather bigger than the rabbit, and are much valued on account of their skins. The marmots of Switzerland, Savoy, and the Alps differ materially from those of America, which are more thickly covered with hair, and whose colour is a much finer grey. The skins of marmots are sometimes dyed brown or black, in the hair, in which state, as well as in their natural colour, they are made into muffs, trimmings for garments, &c.

MARQUETRY, or INLAID-WORK [Ger. *Eingelegte Arbeit*, Du. *Ingelegd werk*, Da. *Indlagd arboyde*, Sw. *Inlagd arbete*. Fr. *Marqueterie*, It. *Tarsia*, Sp *Taracea*, Port. *Embutido Tauxia*, Lat. *Vermiculatum opus*], is a curious work composed of several fine, hard pieces of wood, of various colours, fastened in thin slices on a ground, and sometimes enriched with other matters, as silver, brass, tortoise-shell, and ivory; with these assistances the art is now capable of imitating anything, whence it is by some called the art of painting in wood.

MARTEN [Ger. *Marder*, Fr. *Martre*] The skin of this animal, especially that of the throat, is principally used in trimming the garments of females and the official robes of magistrates, &c. This animal is of a blackish tawny colour, with a white throat, and the belly is of a dusky brown. It is met with in most parts of Europe. The nearer to the north it is found the finer is the skin, and the more varied its colours. Thus, North America furnishes fur of this description of every colour, from a perfect white to a deep black. America, Russia, and Norway produce the finest marten skins.

MAST [*Masts*—Ger. *Masten*, Fr. *Mâts*], a large timber in a ship for sustaining the yards, sails, &c. In large vessels there are four masts, viz., the mainmast, foremast, mizenmast, and bowsprit. The mainmast is the principal one, standing in the middle of the ship; its length, it is said, should be 2⅖ that of the midship beam. The following rule is given to find its length:—Multiply the breadth of the ship, in feet, by 24; from the product cut off the last figure toward the right hand, and the rest will be the length required. Say the length of the midship beam is 30 feet: then 30×24=720, from which, cutting off the last figure, there remains 72 feet for the length of the mainmast; and as for its thickness, it is usual to allow an inch for every yard in length.

MASTIC [Ger. *Mastix*, Fr. *Mastic*], a resinous substance, in the form of tears, of a very pale yellow, and a farinaceous appearance, having little smell, and a bitter, astringent taste. It flows naturally from the tree, but its flow is accelerated by incisions. The lesser turpentine tree and the lentiocus afford the mastic of commerce. It is used in the composition of varnishes, and is supposed to strengthen gums.

MATRICE, or MATRIX, in dyeing, is applied to the five simple colours, whence all the rest are derived or composed. These are the black, white, blue, red, and yellow, or root colour.

MAURITIUS, or ISLE OF FRANCE, an island belonging to Great Britain, in the Indian Ocean, between *Lat.* 19° 58′ and 20° 32′ S., and *Long.* 57° 17′ and 57° 46′ E., about 480 miles E. Madagascar. The island is divided into 11 districts, named, Poudre d'Or, Pamplemousses, Flacq, Riviere du Rempart, Trois Islots, Grand Port, Savane, Quartier Militaire, Moka, Plaines Wilhems and Plaines St. Pierre. *Breadth* 32 miles *Area* 676 sq. miles. *Pop.* (1868) 332,805, of which number 123,507 belonged to the general, and 209,298 to the Indian class *Productions*. The chief is sugar; coffee and rice are grown in small quantities. Indigo, cotton, and spices have been successfully cultivated. The native timber is of excellent quality and considerable variety, including ebony, oak, ironwood, and a kind of pine. About one-third of the population is employed in agriculture. *Imports and Exports*. The value of imports (less £200,000 worth of specie) stands at £2,000,000 for 1868, and that of exports (less specie) at £2,313,134, as compared with only £1,720,000 and £2,003,805 respectively in the previous year, the quantity of sugar shipped appearing as nearly as may be, say, 100,000 tons. Serious commercial and agricultural perturbations shook this colony towards the close of 1868. In March of that year the island was visited by a tempest so violent that the like had not occurred for upwards of thirty years, if, indeed, one of equal intensity ever visited the island. This storm was succeeded by a destructive and protracted epidemic, and the year's sugar-crop was the fifth in succession of indifferent crops. The injury to the staple wrought by the storm proved most serious. The full-grown canes were uprooted or broken short off; the younger plantations were more or less damaged and retarded. It was at first hoped that when the rains would fall the cultivation would recover. As the manufacture advanced, however, these expectations vanished, the canes which looked magnificent before they were cut yielding comparatively little, and before the end of the year it became but too evident that scarcely more than half of the 150,000 tons, at which the crop had been estimated before the hurricane, would be realized. The planters, impoverished by previous calamities, were, for the most part, wholly unable to meet current engagements, or to offer available security to capitalists for the heavy advances requisite to carry on their cultivation until the succeeding crop. At the most critical juncture the branch of the Oriental Bank rendered the most signal services to agriculture; save for the courage and prudence of its managers in sustaining all those planters who had the slightest chance of weathering the storm, the condition of affairs would have become all but desperate. With the timely aid thus afforded, the exercise of strict economy, and the favourable aspect of the European sugar market, the crisis was at length surmounted, and by April, 1869, funds for the rest of the entrecoupe were procurable as usual. Nothing is more remarkable than the rapidity of its recovery. Dependent upon the production of a single article, the whole community seemed on the verge of ruin from a failure; yet, so valuable is that article, that a single season suffices to restore prosperity to all around. It is alleged that Mauritius has seen its brightest days; that sugar cultivation reached its maximum limit several years ago; that the soil is in many districts exhausted, and the cane plant in consequence subject to the attacks of insects and other diseases, &c., &c. In Governor Barkly's opinion, however, there are no adequate grounds for any of these forebodings. "Granted," says he, "that although nearly a fifth of the surface is still either covered with forest, or in a state of nature, it is generally too elevated, and consequently too cold and damp, for the production of sugar, and that little virgin soil is available for that purpose beyond a few patches of woodland at the back of the estates of the more prudent proprietors. Granted that many estates have been improvidently worked, yet there seems to me no reason why, with the improved system of agriculture now commencing, a greater variety of manures, more frequent fallowing, and a more careful rotation of green crops, the land now in cultivation should not go on producing more than it has hitherto done. As to the deterioration of the sugar-cane, which seems to me attributable in no small degree to the immoderate and uninterrupted use of guano the steps which have been taken to introduce fresh varieties from Java, New Caledonia, and other countries will, in the long run, permit the entire renewal of the plant. On the other hand, improvements of the highest importance, though, at the same time, singularly inexpensive are now being carried out in the mode of manufacturing sugar. I allude to what is called the 'Icery process,' a mode of applying monosulphite of lime, by which the juice of the cane is so thoroughly desiccated that sugar but little inferior to refined is produced at a first process. Under present circumstances, the superior articles thus manufactured will be chiefly sent to Australia or Bombay, since it would be subject to a higher duty; but, as the patent will shortly be in universal use, the colonists will, no doubt, be compelled to seek the British market." *Ports.* Port Louis (cap.) on the N.W. extremity, and Mahéborough on the S.E. The harbours of both ports are good and safe, except in the hurricane season. *Port Louis. Pop.* 65,000. Exports, sugar, rum, coffee, maize, and yams. Imports, corn and grain, cotton manufactures, wood, woollen manufactures, tobacco, oils, boots and shoes, beer and ale, wine and linen manufactures, &c. *Money* accounts are kept in sterling; also in dollars of 100 cents, or 10 colonial francs. Private bills in Europe are drawn at 90 days' sight; on India, 30 days' sight; on Bourbon, 15 days' sight. *Weights and Measures.* The quintal = 100lb. French poids de marc = 108lb avoir., 20 quintals = French livre, 1 velt = 2 old Eng. wine gall; 30 velts = 1 cask; 15 French feet = 16 Engl. feet; 7 aunes = 9 Engl. yards; 1 arpent = 1 Engl. acre, 7 perches. *Banks* The Mauritius Commercial Bank, agents, Barnetts, Lombard Street, E.C.; Oriental Bank, Head Office, Threadneedle Street.

Maximum, the highest price of any article, as fixed by some law or regulation.

Merchant is a wholesale dealer in all sorts of merchandise, who exports and imports from different parts of the world, deals in exchange, and buys and sells goods in their original packages without breaking bulk.

Merchantable Commodities are goods in their perfect state, free of mixture, of damage, or in any way injured in quantity or quality.

Mercury [Ger. *Quicksilber*, Fr. *Mercure*, *Argent vif*] is distinguished from all other metals by its extreme fusibility. Its colour is white, and rather bluer than silver. In the solid state it is malleable; its specific gravity is greater than that of any other of the metals, platina and gold excepted. Mercury unites with almost all metals and semi-metals; these compounds are called amalgams. The amalgam with gold serves to gild copper or silver, so that they appear as if made of solid gold. The only use to which the amalgam of quicksilver with lead has hitherto been applied is the luting glass vessels. The amalgam of tin is commonly employed in making looking-glasses. Mercury, in commerce, is judged to be pure when it is perfectly fluid, and runs in neat globules, without any pellicles on its surface, or without soiling a funnel of clean white paper, through which it may be poured by a very small aperture at bottom. If it leaves nothing behind, after evaporation, its purity may be depended upon. If brown and heavy, sticking to the hands and running in *minute globules*, it is evidently mixed with lead. The principal quicksilver mines are in Austria, Spain, and Brazil. But it is found in many other parts, as in Japan, Sicily, Hungary, and Bohemia. It is employed in Chili and Peru to extract gold and silver, when native, from the earthy matters with which they are mixed.

Meal [Ger. *Mehl*, Fr. and It. *Farine*] the edible part of wheat, oats, rye, barley, and pulse of different kinds, ground into a species of flour. The difference between flour properly so called and meal is that the former is freed from the husky part and other impurities of the species of corn whereof it is made; whereas the latter is not. Meal is denominated according to the kind of grain that affords it; such as oatmeal, rye-meal, barley-meal, &c. Scotland is particularly noted for its excellent meal.

Meat, *preserved.* The extent to which meat-preserving has been carried out in Australia since 1870 shows that it is rapidly becoming a valuable and important branch of the colonial trade; and although the prejudice against Australian meat exists still among the classes in this country for whose use it is specially adapted, the dislike is gradually weakening, and in a year or two will probably disappear altogether. The high prices of English meat have placed beef and mutton, with the exception of scraps and remnants of animals, quite beyond the reach of the poorer classes. For it is estimated that the cooked meat from a leg of mutton, costing at the butcher's 11*d.* per lb., costs the consumer 1*s.* 10*d.* per lb., excluding the bones. The difference, then, is so great between these figures and the price charged for wholesome tinned meat, which can be obtained retail at about 7*d.* per lb., that the marvel only is that the consumption of the latter is not more general. The objection to it is absurd. It has none of the pink and white or the firmness of English meat, but its nourishing qualities are quite as great; indeed, in many cases greater, as the flocks and herds in the Australian colonies are fed on natural grasses in the open air, and, in consequence, the meat from them has a flavour and strength superior to much of that produced from the artificially fed stock of this country. The preserving process is simple. The bones "are removed from the meat, which is cut into suitable pieces, and placed in tins. These are exposed to heat until all elements causing decomposition are expelled. The tins are then hermetically sealed, and are not reopened until the meat is required for consumption." For passenger and crew diet, preserved meat of this kind ought to be in high favour, as more nourishing than salt meat, and calculated rather to act as a preventive than to induce scorbutic complaints. The quantities and value of meat imported into the United Kingdom, during the six years 1866—71, were:—

Year.	Quantities.		Declared Value.
1871	237,160	cwts.	£513,186
1870	72,812	,, ...	203,874
1869	28,306	,, ...	80,385
1868	16,337	,, ...	45,746
1867	6,721	,, ...	18,820
1866	91	,, ...	321

Mexico (United States of), a federal republic in North America, extending from *Lat.* 15° to 32° N., and from *Long.* 86° to 117° W. There are twenty-seven states, embracing a territory of 1,030,442 English square miles. *Pop.* 9,176,082. *States.* Sonora, cap. Ures. *Pop.* 109,388. Chihuahua, cap. Chihuahua. *Pop.* 179,971. Coahuila, cap. Saltillo. *Pop.* 98,397. Nuovo Leon, cap. Monterey. *Pop.* 174,000. Tamaulipas, cap. Ciudad Victoria. *Pop.* 108,778. San Luis Potosi, cap. San Luis. *Pop.* 476,500. Zocatecas, cap. Zocatecas. *Pop.* 397,945. Aguascalientes, cap. Aguascalientes. *Pop.* 140.630. Durango, cap. Durango. *Pop.* 185,077. Sinaloa, cap. Culiacan. *Pop.* 163,095. Jalisco, cap. Gaudalajara. *Pop.* 924,580. Colima, cap. Colima. *Pop.* 63,333. Michoacan, cap. Morelia. *Pop.* 618,240. Guanajuata, cap. Guanajuata. *Pop.* 874,043. Queretaro, cap. Queretaro. *Pop.* 153,286. Hidalgo, cap. Pachuca. *Pop.* 404,207. Mexico, cap. Toluca. *Pop.* 650,663. Morelos, cap. Cueruavaca. *Pop.* 150,384. Guerrero, cap. Tixtla. *Pop.* 300,029. Tlaxcala, cap. Tlaxcala. *Pop.* 121,665. Puebla, cap. Puebla. *Pop.* 697,788. Vera Cruz, cap. Vera Cruz. *Pop.* 459,262. Oaxaca, cap. Oaxaca. *Pop.* 646,725, Chiapas, cap. San Cristobal. *Pop.* 193,987. Tabasco, cap. San Juan Bautista. *Pop.* 83,707. Campeche, cap. Campeche. *Pop.* 80,366. Yucatan, cap. Merida. *Pop.* 422,365. Territory of Lower California, cap. La Paz. *Pop.* 21,645. Federal district of Mexico, cap. Mexico. *Pop.* 275,996. *Soil* is exuberantly fertile, with the exception of a few tracts in want of irrigation. *Mines, productions of,* are precious stones, as the ruby, amethyst, topaz, opal, garnet, agate, and chalcedony. The great wealth of the country, according to development up to the present day, consists in its mines. The minerals are silver, gold, copper, zinc, lead, antimony, arsenic, sulphur, cobalt, &c. The mines of gold and silver only have been worked extensively, and silver forms the principal currency of the country and the great article of export. To the south of Morelia, and in the district of Coalcoman, there are most prolific iron and copper mines, and of natural bronze, which comes straight out of the mine with only the usual amount of alloy possessed by zinc. In the neighbourhood of Oajaca, and near two woods and rivers of some extent, there are gold, silver, and iron mines; and provisions are so cheap that their small value may account for the indolence of the natives, who have few wants. With respect to the rich silver deposits of Guanajuato, Zacatecas, Catorce, Tasco, and many others, they are but imperfectly known, and contain an immense amount of riches destined to come, in years after this, to light. A large number of mines are already being profitably worked, and one of those of Guanajuato gave, not long ago, the greatest yields ever known in the whole world. In the evirons of Jalapa there are deposits of gold, iron, and coal, as well as of copper, in fabulous quantities. Coal is found near to Tuxpan, Tlaxcala, to the south of Morelia, and of Matamoros; and in general all the mountains abound in mineral productions, which have never been extracted. There are opal mines at Zimapan, and towards Atargia and Iturbide, mercury, marble, salt, sulphur, saltpetre, &c., which productions exist in a great many places. *Cultivation.* Few countries possess so great a variety, or so great an abundance of vegetable productions, as Mexico. The forests near the coast display the grandest specimens of tropical vegetation, such as mahogany, Brazil-wood, iron-wood, palm-trees, and giant ferns, Campechy wood, and American ebony. Dye-woods abound, especially in the island of Carmen, on the coasts of the states of Vera Cruz and Tamaulipas, on the Atlantic, and on the coasts of the Pacific; logwood particularly being an important article of trade in Zalesco, the mountainous parts of which state produce an abundance of timber, such as ash, beech, elm, and oak. The best cultivated districts of Mexico are those which lie near the rich mines of the plains extending from Zelaya and Salamanca to Silao, Guanaxuato and Leon, the opening of a mine never failing to call tillage into existence. Of the articles of food cultivated, maize is the most important to the Mexican labourer, and in some places the yield is immense, being often at the rate of 250 bushels for every bushel planted. Maize constitutes the staple article of subsistence alike of man and beast in all the central states. The districts most distinguished for the culture of it are the southern and eastern parts of the state of Mexico and the states of Puebla, Queretaro, and Oajaca. Wheat and barley are also cultivated on the table-lands at the height of about 7,000 feet. The former often yields from twenty to sixty fold, or more; and the best quality is grown at Allisco, in the state of Puebla, and in the valleys between Queretaro and Guanaxuato, called the "Bajio." The *vine* is cultivated with success in certain districts, such as those round the town of Parras, in the state of Coahuila, and in Tehuacan, and the wine made is of good quality. Little *coffee* is grown out of the state of Vera Cruz, except at Colima, where the trade is principally monopolized by a few German houses. In the districts of Orizaba and Cordova the crop does not reach more than 6,000 quintals. The cost of production is about 8 cents per lb. *Cotton* is grown in considerable quantities on both the Atlantic and Pacific coasts of Mexico, and also in the northern states of the interior, Durango and Coahuila. But little of the cotton grown on the west coast of the country is brought to the city of Mexico itself, or its neighbourhood; that produced in Guerrero and Michoacan being chiefly consumed in a factory established at Colmina, a town which contains a number of German commercial houses, and which, from its convenient proximity to the port of Manzanillo, on the Pacific, has become a place of considerable trade, while the cotton produced in the province of Julisco forms part of the supply required for the spinneries of Guadalajara and Tepic. The cotton spinneries in Mexico consume, per annum, about 14,400,000 lb. of cotton wool, which is mostly made into heavy brown shirting and also sheeting, denominated "mantas," weighing from 5 lb. to 10 lb. per piece of 30 yards, the remainder being sold in yard, Nos. 12 to 24, which is then dyed and woven into "rebosos" (a kind of scarf of almost universal usage among the females of the lowest classes), and other sorts of goods peculiar to the wants of the peasantry. The annual value of the cotton manufactures of the country amounts to between 10,000,000 and 12,000,000 dollars. *Sugar.* The best is produced in the states of Orizaba and Jalapa; but the greatest sugar-growing districts are those of Cuernabaca and Cuaulla. The average annual produce of it manufactured has been roughly estimated at 75,000,000 lb. Cochineal is largely exported. Rice is cultivated to a considerable extent in the "Tierras Calientes," and yields from 40 to 60 per cent. *Commerce* is principally in the hands of the British and American merchants, who supply the inhabitants with manufactured goods of a better quality and cheaper than the native producers. More than two-thirds of the total trade is carried on with the United States. The following statement gives the total value of the exports from Mexico to Great Britain, and of the imports of British produce into Mexico in each of the five years from 1867 to 1871:—

Years.	Exports from Mexico to Great Britain. £	Imports of British Produce into Mexico. £
1867	315,168	812,948
1868	350,664	848,588
1869	350,570	631,724
1870	299,813	910,882
1871	397,334	1,049,013

The principal articles exported from Mexico embrace copper and silver ores, cochineal, indigo, hides, and mahogany and other woods. The staple imports are cotton and linen manufactures, wrought iron, and machinery. *Chief ports for foreign trade* are Vera Cruz, Tampico, Campeachy, Matamoras, Sisal, and Tabasco, in the Gulf of Mexico; San Blas, Mazatlan, and Acapulco, on the Pacific; Guaymas, in the Gulf of California; and Monterey, on the Sea of Upper California. *Money.* The dollar of 100 cents=4*s.* *Weights and Measures.* The arroba for wine=3½ imp. gall.; for oil=2¾ imp. gall.; square vara=1·09 vara=1 yard; fanega=1½ imp. bushel.

MILK. The milk of every animal has certain peculiarities which distinguish it from every other milk. But the animal whose milk is most made use of as an article of food, and with which, consequently, we are best acquainted, is the cow. The consistence of milk is greater than that of water, and it is slightly unctuous. Like water, it freezes when cooled down to about 30°, but its freezing point varies considerably, according to the kind of cow, and its condition. Milk boils also when sufficiently heated, but the same variation takes place in the boiling point of different milks, though it never deviates far from the boiling point of water. When milk is allowed to remain for some time at rest, there collects on its surface a thick, unctuous, yellowish-coloured substance, known by the name of cream. The cream appears sooner on milk in summer than in winter, evidently owing to the difference in temperature. After the cream is separated, the milk which remains is much thinner than before. If it is heated, and a little rennet is poured into it, coagulation ensues, and if the coagulation is broken, the milk very soon separates in two parts; a solid white part known as curd, and a fluid part, called whey. Cow's milk is formed of the following ingredients:—(1) water, (2) oil, (3) curd, (4) gelatine, (5) sugar of milk, (6) muriat of soda, (7) muriat of potass, (8) sulphur, (9) phosphate of lime. The milk of all other animals consists nearly of the same ingredients, but there is a very great difference in the proportion. Ass's milk differs from cow's milk in three particulars: its cream is less abundant, and more insipid; it contains less curd; it contains more sugar of milk; the proportion is 35 to 80. Goat's milk, if we except its consistence, which is greater, does not differ much from cow's milk. As an article of traffic, cow's milk is the only kind that is entitled to rank as such: and perhaps there is no article which has suffered so much at the hands of unscrupulous vendors. It has been, and still is, reduced by water, and impregnated with worse ingredients, to an extent that in many cases renders it unfit to be used as food. This applies more especially to the metropolis and the large towns throughout the country, where buyers are in a measure at the mercy of the dairymen. Efforts have been made to put a stop to the scandalous frauds and impositions in general practice, and vendor after vendor has been fined for adulterating his milk, but it seems as difficult as ever to get the genuine article within the boundary of the metropolis.

Millet [Ger. *Hirse*, Fr. *Millet*] is a native of India, but is now commonly cultivated in many parts of Europe as an esculent grain. It rises with a reddish stalk, 3 or 4 feet high. The top of the stalk is terminated by a large, loose pannicle, which hangs on one side, having a chaffy flower, which is succeeded by a small round seed. There are two varieties, one with white and the other with black seeds, but they do not differ in any other particular.

Mirobolans [Ger. *Myrobalanen*, Du. *Myrobalannen*, Da. *Myrobalaner*, Sw. *Mirobalaner*, Fr. *Myrobolans*, *Mirobolens*, *Mirabolons*, It. *Mirabolani*, Sp. and Port. *Mirabolanos*, Rus. *Myrobalain*], a small purgative fruit, of considerable utility in pharmacy. This drug is divided into various species—namely, the lemon-coloured, the black, the kebuli, the belerin or golden, and the Indian mirobolans. The yellow-coloured mirobolan is of a reddish yellow, of an astrigent, disagreeable flavour, in figure resembling a plum, and inclosing a small kernel, somewhat like that of a white pine-apple. The second kind is black sometimes shaded with green, about the size of a gall-nut, and may easily be broken into pieces. The kebuli is very like the lemon-coloured mirobolan, but it is darker, larger, and of a more acrid taste. The belerin is about the size of a nutmeg, externally of an orange-colour, yellow internally, and of an astringent taste. The Indian mirobolan is somewhat long, about as thick as the top of a child's forefinger, black externally and internally, containing no nut, extremely hard, and of a bitterish, astringent taste. Mirobolans are brought from India, and are principally gathered in the vicinity of Goa, Bengal, and the coast of Coromandel.

Mocha, or Mocho Stone. The agate, when it contains arborizations, or small figures of trees or moss, is called the Mocha stone.

Mohair [Ger. *Mohr*, Du. and Da. *Moor*, Sw. and Fr. *Moire*, It. *Moerro*, Sp. *Mue*, *—uer*, Port. *Chamalote*, *Melania*, Rus. *Obür*, Pol. *Mora*]. The mohair goats are a variety of the common goats, being famous for their soft and silvery white hairs, the like of which is not to be found in any place but Angora.

Molasses, or Melasses, the gross fluid matter that remains of sugar after refining, which no boiling can bring to a consistence more solid than syrup. There is a kind of syrup distilled from molasses.

Money. In the earliest ages the ordinary way of traffic, no doubt, was by exchanging one commodity for another; but in process of time it was found necessary to have some common standard, according to which all other things should be estimated. The first account we have of money is in the time of Abraham, who paid 400 shekels for a burying-place. Money being a common measure for reducing merchandise to a balance, the Greeks called it *νομισμα* (whence the term *Numismatics*) as being established by law—(*νομος*); it was called *pecunia* by the Latins, either because the wealth of those days consisted in cattle (*pecus*), or, according to Pliny, that their coin was first stamped with the figure of a cow; they also called it *moneta*, because, when the Romans wanted money, Juno admonished them to use justice, and there should be no want of money; hence she received the title of Juno Moneta, and money was coined in her temple. In process of time, money was made a goddess, called *Dea Pecunia*, under the figure of a woman holding a balance in one hand and a cornucopia in the other. Numa Pompilius made money of wood and leather. The first silver money coined by the Romans was in the year of Rome 484, and their first golden coinage in 546. Among the ancient Britons iron rings or iron plates were used for money; among the Lacedæmonians iron bars prepared in vinegar. Seneca observes that anciently stamped leather was current as money, a circumstance which occurred in England in the time of the barons' wars; and the Hollanders coined great quantities of pasteboard in 1574. The impression on coins has been various in different ages and countries, As to the figure of the coin, it is either round, as in England, square, as in some parts of the East Indies, or nearly globular, as in others. Money at present is either real or imaginary. Real money includes all coins, whether of gold, silver, copper, or the like. Imaginary money, or money on account, is that which never existed, or, at least, which does not exist in real specie, but is a denomination invented or retained to facilitate the stating of accounts, by keeping them on a permanent basis, not to be changed like currency.

Monsoons are winds which blow in a certain direction for a time, and at certain stated seasons change and blow for an equal space of time from the opposite point of the compass. During the months of April, May, June, July, August, and September, the wind blows from the southward over the whole length of the Indian Ocean, viz., between the parallels of 28° N. and 28° S. lat. and between the eastern coast of Africa and the meridian which passes through the western part of Japan; but in the other months, October, November, December, January, February, and March, the winds in all the northern parts of the Indian Ocean shift round, and blow directly contrary to the course they held in the former six months. For some days before and after the change, there are calms, variable winds, and tremendous storms, with thunder, &c.

Mooring is the laying out the anchors of a ship in a place where she can ride securely. Mooring across is laying out on each side; and mooring along is to have an anchor in a river and a hawser on shore. When ships are laid up in ordinary, or are under orders for fitting for sea, the moorings are laid out in harbours, and consist of claws, pendent chains, cables, bridles, anchors, swivels, jews-harps, buoys, and chains.

Mordant, or **Mordicant**, in dyeing, signifies those substances which are employed for the purpose of macerating the stuffs, and rendering them capable of imbibing the tinging matter.

Morocco [*Moghrib-el-aksa*], the most important of the Barbary States, is bounded N. by the Strait of Gibraltar and the Mediterranean, E. by Algeria, S. by the Sahara, and W. by the Atlantic. *Area*, 274,000 square miles. *Pop.* about 8,000,000, embracing Arabs, Moors, and Berbers. *Chief towns.* Besides Morocco, the capital, the chief towns are Tangiers, Tetuan, El Araish, or La Nash Salé, and Rabatt Mozadore, Azadir, Fez, Teza, Mequinez, Tefsa, Demnet, Jerodant, Tadsi, Tafilst, Talbor, and the Spanish town of Ceuta. *Trade and Commerce.* Since the convention of commerce between Morocco and this country was signed, in 1856, trade has been gradually improving. Previous to that year it was confined within very narrow limits; trade in the principal articles of exportation was restrained by a system of monopolies, the Sultan being accustomed to grant the exclusive privilege of purchase or sale in them to certain persons either as a favour or for a sum of money. The same system was also pursued in the case of imported goods. The convention put an end to this system; favouritism was abolished, and all persons engaged in commerce were placed on an equality, absolute freedom of purchase and sale being conceded to all. The average yearly value of foreign goods imported into Morocco during the eleven years from 1845 to 1855 inclusive, amounted to £315,709, of which £240,910 represents the value of goods imported from Great Britain and Gibraltar. The average yearly value of produce exported during the same period was £400,873, of which produce, to the value of £303,188, was exported to Great Britain and Gibraltar. The average yearly value of foreign goods imported into Morocco during the eleven years from 1861 to 1871 amounted to £811,805, of which £656,443 was from Great Britain and Gibraltar; the average yearly value of exported produce was £767,741, of which £469,552, went to Great Britain and Gibraltar. It results therefore from these figures, first, that the trade of Morocco during the years 1861 to 1871 was more than double what it was during an equal number of years before the convention was negotiated; and secondly, that its trade with Great Britain and Gibraltar forms more than two thirds of its entire trade. The increase would have been even greater but for the unfortunate failure of crops consequent upon drought, which afflicted the country for three consecutive years Trade in British goods was formerly carried on almost exclusively through British mercantile houses in Gibraltar. But with the greater development of trade lines of steamers have been established to carry goods between England and Morocco. Moorish merchants have also established themselves in London and Manchester, and their friends and partners in Morocco find it more advantageous to purchase goods direct than at second-hand through Gibraltar houses. The *Export trade* of Morocco consists principally in grain, wool, almonds, gums, hides, goat-skins, slippers, oil, and wax. The *Import trade* is principally in cotton and linen manufactured goods, cloth, colonial produce, iron, raw silk, and tea. The duty to be levied on all imported goods is limited by treaty to 10 per cent. *ad valorem*. *Ports.* On the Atlantic side, Mogadore, Saffee, Mazagan, Rabatt, and Larash; and on the Mediterranean side, Tangier and Tetuan. *Money* of account is the nicktul, of 10 ounces = 3*s.* 1*d.* The currency is composed of dollars, doubloons, and Madrids. The Madrid is a gold coin = 10 dollars. *Weights and Measures.* The rottolo or commercial pound = 8330 troy grains, and the quintal of 100 commercial pounds=119 avoirdupois. The cauna, cloth measure = 21 imp. inches.

Morocco, or **Maroquin** [Ger. *Saffian*, Du. *Levantsch leer*, Da. and Sw. *Saffian*, Fr. *Maroquin*, It. *Marrocchino*, Sp. *Marroqui*, Port. *Marroquim*, Rus. *Safian*, Pol. *Szafian*, Lat. *Caprina aluta*], a fine kind of leather, prepared from the skin of an animal of the goat kind. The name was probably taken from the kingdom of Morocco, whence the manner of preparing it was borrowed.

Mozambique, a territory belonging to the Portuguese on the E. coast of Africa, extending from the Bay of Delagoa to Cape Delgado. *Mozambique*, the capital, is in *lat.* 15° 3′ S., *long*, 40° 48′ E. *Pop.* 8,522. It is situated near the mouth of a bay some 6 miles long and 5 broad, which furnishes a safe and excellent harbour. The legitimate traffic of the place is principally carried on by Arab ships, which bring piece goods and Indian produce, and take back ivory and gold dust.

Muscat, the capital of Omaun, and of the States of the Imam or Sultan of Muscat, situated near the E. angle of Arabia at the head of a small inlet of the Indian Ocean, near the entrance to the Persian Gulf, in *lat.* 23°38′ E., *long.* 58° 42′ E. *Pop.* about 60,000. Sugar and coarse cloth are manufactured here. There is an extensive transit trade with Arabia, Persia, and India. Cloth and corn are the principal imports, the exports consist of dates, horses, salt-fish, hides, and madder.

Musk [Ger. *Bisam*, *Moschus*, Du. *Muskus*, Da. *Desmer*, Sw. *Desman*, Fr. *Musc*, It. *Muschio*, Sp. *Almizele*, Port. *Almiscar*, Rus. *Muskus*, Pol *Pizmo*, Lat. *Moschus*], a very strong-scented substance, found under the belly of the male of a species of goat, called *moschus mociferus*. After killing the animal, the peasants cut off the bag containing the musk. In its original state it is nothing more than putrid blood, which coagulates in this bag. The largest bladder does not furnish above half an ounce of musk, and that of the common size seldom more than a quarter of an ounce. Musk affords such a strong smell that it becomes disagreeable, if not kept at a distance, or weakened by the admixture of other substances. It is likewise so fixed and permanent, that at the end of several years it seems to have lost no part of its pungency. It comes to us dry, with a kind of unctuosity, of a dark reddish or rusty blackish colour, in small round grains, with very few hard black clots, and perfectly free from any sandy or other visible foreign matter. If chewed and rubbed with a knife on paper, it looks smooth, bright, yellowish, and free from bitterness. Laid on red-hot iron, it catches flame, and burns almost entirely away, leaving only an exceedingly small quantity of light greyish ashes: if any earthy substances have been mixed with the musk, the quantity of the residuum will readily discover them. The best and greatest quantities of musk come from Thibet, whence they are carried for sale to Patna, the chief town of Bengal.

Musk-Seeds [Ger. *Bisamkorner*, Du. *Muskuszaad*, Da. *Desmerkorn*, Sw. *Desmanskorn*, Fr. *Ambrette*, *Grain musquée*, It. *Granelli d'ambretta*, Sp. *Ambarilla*, Port. *Ambaralhi*, Pol. *Ziarkapigmowe*, Lat. *Abelmoschi grana*], is the seed of a plant which grows in Egypt and the West Indies. This seed yields an odour precisely similar to that of real musk, and is accordingly employed with success in the composition of several species of perfume. The Italian perfumers consume vast quantities of it, and in France it is customary to form it into necklaces, bracelets, and other toys, for the use of children. The musk-seed brought from the island of Martinico is accounted better than any other. This seed ought to be chosen fresh, plump, dry, perfectly clean, and of a strong odour.

Muslin [Ger. *Musselin*, *Nesseltuch*, Du. *Neteldock*, Da. *Netteldug*, Sw. *Nättelduk*, Fr. *Mousseline*, It. *Moussolina*, Sp. *Moselina*, Port. *Cassa*, *Caca*, *Musselina*, Rus. *Kissea*, Pol. *Muslin*] is a fine, thin fabric, formerly imported from India, but now made in large quantities at Manchester and Glasgow.

Mustard [Ger. *Mustert*, *Senf*, Du. *Mostert*, Da. *Senep*, Sw. *Mostert*, F. *Moutarde*, It. *Mostarda*, Sp. *Mostaza*, Port. *Mostarda*, Rus *Gortschiza*, Pol *Muszlarda*, Lat. *Sinapis*] is a plant of which there are 17 species, three of which are natives of Great Britain—the *sinapis alba*, *nigra*, and *arvensis*. The alba or white mustard, which is frequently cultivated as a salad herb, for winter and spring use, produces white seed, employed for making the sauce called mustard. The nigra, or common mustard, is frequently found growing naturally, but it is also cultivated in fields, for its brown seed. The arvensis grows on arable land in many parts of Great Britain. The seed of this is sold under the name of Durham mustard-seed. The white and brown are commonly imported from Holland, though always inferior to that of English growth. Brown is more valuable than white, and is chiefly used for pickling.

Myriad, the number of 10,000.

Myrrh [Ger *Myrrhen*, Du. *Mirrhe*, Da. *Myrre*, Sw. *Myrha*, Fr. *Myrrhe*, It. and Sp. *Mirra*, Port. and Lat. *Myrrha*], a gum resin, brought from the East Indies, and likewise from Alexandria, Smyrna, and Aleppo. It is hard, dry, glossy, of various colours, yellowish, reddish, brown, yellowish-brown, reddish-brown, blackish, intermixed with whitish specks or tears, transparent like agate, or opaque like pitch, of a peculiar strong smell, and a bitter somewhat biting taste. The best is that which is of a reddish-brown colour, not verging too much to yellowish or blackish; uniform on the outside, internally specked or streaked with white, clear and bright, somewhat unctuous to the touch, but not tenacious, so as to stick to the fingers.

N

Nail, a measure of length, containing the 16th part of a yard.

Nails [Fr. *Clous*, Ger. *Nägel*, *Spiker*, It. *Chiodi*, *Chiovi*, *Aguti*, Sp. *Clavos*, Port, *Pregos*, Rus. *Gwosdi*] are made principally near Birmingham, where from 16,000 to 20,000 tons of iron are cut for that purpose during the year. One-half of the production is taken by the home trade, and the rest for shipment to India, Australia, and South America. The nails are cut from iron sheets, and are afterwards heated in an air-tight box, which renders them to some extent malleable. The sorts manufactured vary in weight and size from 3-16ths of an inch, weighing per 1,000 1¾ oz., to "8-inch spikes," 1 cwt. per 1,000.

Nainsooks, a species of Bengal muslins.

Nankeen, **Nankin**, or **Nanqueen** [Ger. *Nanking*, Du. *Nankings linnen*, Da and Sw. *Nanking*, Fr. *Toile de Nankin*, It. *Nanquino*, Sp. *Nanquina*, Port. *Nanquin*], a species of cotton cloth closely woven. It takes its name from Nankin, a city of China, where the reddish thread of which the stuff is made was originally, and still is, spun. This manufacture has been carried to the highest pitch of perfection in the East Indies, where vast quantities of white, pink, and yellow nankeens are made. At Manchester, and other parts of Great Britain, these articles are imitated with success.

Nanque, the smallest weight used at Madagascar for weighing gold and silver; it is equal to six grains.

Naptha [Ger. and Du *Bergbalsam*, Da. *Biergbalsom*, Sw. *Bergbalsam*, Fr. *Napthe*, It. Sp. and Port. *Nafta*, Rus. *Nefti*, Pol. *Kley oguisti*, Lat. *Naphtha*], a fine thin, flagrant, colourless oil, which issues out of white, yellow, or black clays. It burns with a blueish-yellow flame; is as inflammable as ether; and, like it, extracts gold from aqua regia. It is not decomposed by distillation; and yet, if long exposed to the air, it changes colour, thickens, and degenerates into petrol. Its smell is very different from that of vegetable oils; it dissolves resins and balsams, but neither gum resins nor caoutchouc. It dissolves essential oils of thyme and lavender; but is insoluble in spirit of wine and ether.

Nard, *Indian*, or **Spikenard** [Ger. *Spikanarden*, *Indianische Narden*, Du. *Spikanard*, *Indische Spikanard*, Da. *Spikenardes*, *Indisk Spikrod*, Sw. *Spikanarde*, Fr. *Nard Indien*, *Spicanard*, It. *Spigo nardo*, Sp. *Espicanardi*, *Nardo-Idiano*, Port. *Epicanardo*, *Nardo Indiano*, Rus. *Spikanard*, Pol. *Spikanarda*, Lat. *Nardus*, *seu Spika Indica*], consists of a number of slender, brittle filaments, supposed by some to be the root, by others the pedicle of the leaves of a plant of the grass or rush kind; but which are properly the head of a root; for Pomet mentions and figures a specimen which had great part of the root adhering. According to Sir William Jones, it is a species of valerian. Spikenard has a very strong, not agreeable smell and taste, scarcely to be concealed by a large admixture of other substances.

Neat, or **Net-weight**, the weight of a commodity alone, clear of the cask, bag, case, and even filth.

Needles, the manufacture of, is at present carried on at Redditch, in Worcestershire, Hathersage, in Derbyshire, and near Birmingham. "The construction of a needle," says Dr. Ure, "requires 120 operations, but they are rapidly and uninterruptedly successive. A child can trim the eyes of 4,000 needles per hour."

Neep, or **Neep Tides**, those tides which happen when the moon is in the first and last quarters, being low, when compared to spring tides.

Netherlands, **Kingdom of** [Du. *Nederlanden*, Fr. *Pays Bas*], or Holland, lies between *Lat.* 51° 15' and 53° 50' N. and *Long.* 3° 30' and 7° 12' E., and is bounded N. and W. by the north sea, E. by Hanover and Prussia, and S. by Belgium. Length from N. to S. 160 miles, breadth from 60 to 120 miles, with an area of 13,890 square miles. *Provinces.* Brabant, *Pop.* 436,798; Guelderland, *Pop.* 437,819; South Holland, *Pop* 703,213; North Holland, *Pop.* 590,454; Zealand, *Pop.* 179,435; Utretcht, *Pop.* 176,234; Friesland, *Pop.* 300,863; Overyssel, *Pop* 259,263; Groningen, *Pop.* 232,273; Drenthe, *Pop.* 108,257; Lunburg, *Pop* 227,461. *Total*, 3,652,070 Grand Duchy of Luxemburg, with which the kingdom is connected in the person of the Sovereign, *Pop.* 206,985 *Colonies.* The kingdom possesses important colonies in various parts of the world, whose aggregate population far exceeds that of the mother country. The principal of these are:—In the East Indies, Java, Medura, Banca, Ternate, Amboyna, Banda, Timor, and extensive territories in Sumatra, Borneo, Celebes, and New Guinea; in America, Surinam, Curacoa, and the islands of St. Eustatius, St. Martin, and Saba; and in Africa a few ports on the Guinea Coast. The entire population of the Monarchy is upwards of 20,000,000. *Surface* is almost everywhere a dead level. The monotony is, however, relieved by the numerous canals, crossed by frequent bridges. The soil is naturally poor, but by cultivation has been rendered rich and productive. Wheat, rye, barley, oats, peas, beans, buck-wheat, madder, rape-seed, hops, tobacco, clover-seed, mustard-seed, flax and hemp are extensively raised. The annual average crop of the cereals is about 16,000,000 bushels, and of potatoes, about 20,000,000 bushels. The greater part of the soil, however, is devoted to pasturage, for which it is admirably adapted. In South Holland the pasture-land is twice as extensive as the arable, while in Friesland the proportion is more than eight to one. Immense quantities of butter and cheese are produced and exported, at high prices. The annual value of these two aticles is frequently as high as £7,000,000. *Industries.* There are upwards of 600 ship-yards, 350 brick manufactories, 312 oil-mills, 285 tobacco manufactories. The fabrication of earthenware at Delft is extensive and celebrated. Holland has long been famous for its distilleries of spirits, especially of gin, for which Schiedam is well known. There are 27 sugar refineries; the manufacture of paper is extensive, and there are in four provinces upwards of 600 establishments for the manufacture of boots and shoes for exportation. *Manufacture of silk, cotton, linen, and woollen tissues.* The manufacture of cotton goods is principally established in a part of the province of Overyssel, bearing the name of Twenthe. The different establishments are situated in towns of no great size or amount of population. The only element of production in these places is labour. Coal is brought from a considerable distance, and the price is accordingly represented as from four to five times as high as in England. Machinery has to be carted along the high road. The transport adds about 20 per cent. to the cost of machinery. Notwithstanding all drawbacks, the factories are in full work, and the trade is represented as thriving. Labour throughout the Netherlands is comparatively cheap, and wages, notwithstanding the rise which has taken place in some of the large towns, are still considerably below those paid in England. As a general, indeed almost invariable rule, the Dutch, as well as the foreign employers, dispense with any but native labour except in the case of skilled foremen. In the first place, it is much cheaper; but the character of the native labourer very materially helps to bring about this state of things. He is provident, industrious, and of a naturally contented disposition, and though he may not unfrequently find it somewhat difficult to make his earnings supply his necessary wants, he prefers using amiable and legitimate means for improving his condition to joining in strikes. The system of paying labour is either by the week or by the hour, or by the piece; the two latter plans having become very general of late, especially that of paying by the hour, as it is found that men have an interest in working as long as their employers will permit.* The engagements of labourers depend on the quantity of work in demand, and on their own ability and conduct Although it is not the custom for an employer to discharge any of his hands until the end of the week, still he is at perfect liberty to do so; and on their side the workmen may go elsewhere for employment at a moment's notice, without thereby forfeiting their claim to any wages that may at the time be due to them. There is no law for limiting the hours of labour or for prohibiting children under a certain age from working in factories. As a general rule, the hours of labour vary from ten to fifteen hours a day, including intervals for at least two meals; probably twelve hours may be reckoned as an average rate, taking one factory with another. A good deal of the weaving is performed by the men at their own homes. The manufacturer provides the material, but not the machinery, and purchases the textiles at so much per piece or by the weight, as the case may be. In the mills near Almelo the following may be taken as the range of wages per week:—A spinner, from 8 to 12 florins; female spinners, 4 to 6 florins; children, 2 to 4 florins. Weavers, 4 to 8 florins; female weavers, 3 to 5 florins, children, 2 to 3 florins. (1 florin=1*s.* 8*d.*; 12 florins=£1.) These figures represent in each instance the earnings of skilled labourers, that is to say of workmen who are thoroughly up to their trade. In the case of any young children or of children who are learning their work, the wages are about a 1*s.* per week. The spinning establishments are not sufficient to supply the yarn required, so that a large quantity is imported from England. The goods principally manufactured are calicoes and shirtings; part of the former are sent to the bleaching works, where they are converted into madapollams. A sort of cotton blanket is also manufactured for the Indian market, called "molten dekens." In a town in the neighbourhood of Hengelo are manufactured the stuffs worn by the Japanese as dresses, known by the name of "Savangs," "Kainpandjangs." The native patterns are closely followed in these. Each dress is woven separately, and they are made up in packages of 20 each, called "corges." In this description of goods they are subject to competition with Switzerland and Bavaria. Most of these goods are sent to the East by private houses, and some on account of the manufacturers themselves. The following tables show the progress of the cotton and woollen trade with Great Britain during a period of five years ending December 31, 1870. Value in florins (12 florins=£1) imported into Holland from Great Britain from 1866-1870:—

	Cotton.	Woollen.	Hemp, Flax, and Jute.	Total.
	Fl.	Fl.	Fl.	Fl.
1866	18,816,287	11,092,952	4,148,183	34,057,422
1867	18,566,820	13,322,490	4,050,747	35,940,057
1868	19,618,474	15,000,439	3,709,922	38,328,835
1869	17,928,028	14,806,835	3,404,293	36,139,156
1870	21,353,010	14,527,797	3,185,527	39,066,334

---

* There is a general opinion, not unfrequently shared by the workmen themselves, that the Dutch labourer is not equal in point of skill to the foreign workman—that he is slower at his work, and turns it out in a less finished state. Possibly there may be some grounds for this opinion as regards highly skilled and factory hands, but with respect to the ordinary labourer, it is doubtful whether any very marked difference exists.

The yarns were principally for use within the country. Raw cotton imported into Holland from Great Britain from 1866–70:—

	Kilog.	Value. Fl.
1866	30,198,234	18,118,940
1867	28,585,001	17,151,001
1868	30,176,184	18,105,710
1869	28,556,951	17,134,171
1870	25,733,691	15,440,215

Nearly the entire supply of raw cotton comes from Great Britain, which furnished about fourteen seventeenths of the total quantity imported during the years mentioned. Value of cotton and woollen goods imported from Great Britain during 1866–70:—

	Cotton Fl.	Woollen. Fl.
1866	15,062,272	5,139,206
1867	12,010,891	5,664,256
1868	10,608,302	6,008,205
1869	9,820,637	6,553,987
1870	10,269,110	7,896,421

Value of manufactures exported from Holland to Great Britain from 1866–70:—

	Fl.
1866	6,122,044
1867	4,112,771
1868	5,117,596
1869	6,420,771
1870	10,088,916

In Haarlem there are several silk manufactories, but not on a large scale. In Leyden, in the province of S. Holland, there are several manufactories of blankets, baize, camlets, cottons, &c. The province of N. Brabant is the seat of a considerable linen trade. Damasks of a superior quality and design are manufactured at Boxtel and other places; and a large number of the peasantry are engaged in linen-weaving in their own cottages, bringing the produce of their labour to an annual fair which is held at Bois-le-Duc on St. John's Day. This industry is also very generally carried on through the country by the small farmers, during the time when they are not fully engaged in field labour. There are two kinds of carpets manufactured in the Netherlands. The fabric is in the style of the Turkey carpets, but the colours are generally much gayer, and the patterns more varied. They are said to be equally durable, but the cost of them is considerable. None is lower than 5⅜ florins the square ell, equivalent to about 16*s.* 4*d.* per square yard. They are made entirely by hand, generally by girls, as the work is not laborious. In the ordinary kind, the warp is of wool, but in the fine kinds jute is used for that purpose. The other kind of carpeting is the reverse of this in every respect. It is neither gay, nor durable, nor high priced; the material of it is cowhair, which is spun by hand, not being capable, as it is represented, of being spun by machinery. A part of the yarn is dyed, but there is no great variety of colour. The ordinary quality is retailed at about 70 cents. per ell, equivalent to a little more than 2*s.* per square yard. Carpeting is also made of the same kind as what is called Kidderminster carpet in England. At the present rate of duties, it competes successfully with English goods of the same quality, but the better description cannot be manufactured so cheaply as to exclude the English. *Commerce.* This is chiefly carried on with Great Britain and Germany. *Important articles of export* Cotton, bullion, woollen yarns, cattle, cheese, flax, coffee, sugar, and tobacco. *The principal articles of import* are cotton and woollen yarns, drugs, wheat, iron, manufactured goods, coffee, rice, sugar, and tea. The value of the trade of the kingdom for five years was as follows:—

Years.	General Imports.	Imports for Home Consumption.	General Exports.
	Guilders.	Guilders.	Guilders.
1865	483,033,812	386,458,721	428,359,997
1866	511,207,289	407,385,180	424,493,422
1867	534,768,434	421,709,322	436,177,469
1868	554,473,868	446,135,774	468,415,969
1869	570,720,218	455,960,258	490,809,113

Great Britain contributed in 1869 29, and Germany 25, per cent. of the general imports. Of the total exports, 25 per cent went to Great Britain, and 39 per cent. to Germany. *Mercantile Marine.* The number of vessels in 1869 was 2,059; tonnage, 264,098. *Chief Ports.* Amsterdam (which *see*) and Rotterdam. *Money.* The guilder or florin=1*s.* 8*d.* *Weights and Measures.* The kilogram (Pond) =2·206 lb. avoir.; the meter (el)=3·281 imp. feet; the liter (kan)=1·76 imp. gall.

NET-PROCEEDS, the amount or sum which goods produce after every necessary deduction is made.

NEW BRUNSWICK, a British colony in North America, between lat. 45° and 48° 5′ N., and long. 63° 50′ and 67° 53′ W. Length from N. to S. 180 miles; breadth, 150 miles; area, 27,620 square miles; *pop.* about 200,000. The geology of the interior is not minutely known. Several salt springs are found. Iron ore is abundant, copper has been found on the banks of the Nepisiguit, and plumbago near St. John. There is a coal field in the central counties, which covers an area of about 10,000 square miles. The chief vegetable production is timber, of which there is the usual variety found in North American forests, but the pine is the principal kind exported. Indian corn is grown in the southern parts; flax, wheat, and other cereal are raised. *Industries.* Saw and grist mills, employing 4,668 hands, 125 tanneries, 32 weaving and carding establishments, 11 foundries, 8 breweries, and 94 other factories. Shipbuilding is carried on extensively. The value of the imports is estimated to be £40,000 annually, and of the exports £90,000. *Principal ports.* Fredericton, the seat of government, *pop.* 3,000; St. John, commercial capital, *pop.* 10,000; St. Andrews, Newcastle, and Dalhousi.

NEWFOUNDLAND, a British colony in the Atlantic, E. from the Gulf of St. Lawrence. *Area*, 57,000 square miles; *pop.* about 150,000. Newfoundland derives its importance from the fisheries upon its coast. *Trade.* In 1867 the imports were estimated at 5,561,008 dols.; exports, 5,068,603 dols. In 1868, imports, 4,304,423 dols.; exports, 4,263,660 dols. The importations were less in 1868 than those of 1867, owing, in a great degree, to an excess in that year, which left large stocks on hand; those goods which pay *ad valorem* duty being at least one half the deficiency. The remainder is made up on the principal articles of commerce—viz., flour, pork, butter, molasses, salt, spirits, sugar, and tobacco. There is also, chiefly in the articles of dry cod, salmon, and sealskins, a falling off in the export trade, both as regards quantity and value.

NEW GRANADA, *see* PANAMA.

NEW ZEALAND, *see* ZEALAND, NEW.

NORWAY, a kingdom of northern Europe, occupying the western portion of the Scandinavian peninsula, and lying between *Lat.* 58° 5′ and 71° 11′ N., and *Long.* 5° 11′ and 32° E. It is bounded N. by the Arctic Ocean, E. by Russia, Lapland, and Sweden, S. by the Skager Rack, and W. by the North Sea and the Atlantic. Length about 1,080 miles, and greatest breadth 275 miles. *Principal Cities and Towns* are Christiania, the capital, Bergen, Drontheim, Stavanger, Drammen, Christiansand, and Frederickshald." *Pop.* 1,701,365; *area*, 92,000 geo. sq. miles. *Mining.* The geographical discoveries that have been carried on under the auspices and at the expense of the state have resulted in the discovery at Fenmark of coal formations as well as gold; the latter has been found in the sand of the rivers Alten and Tana, as well as on the banks on each side. Limestone, quartz, and hornblende are also found. The mountains are rich in iron, copper, silver, and cobalt. *Soil* is in general of a poor quality. The land of a light, sandy texture, which, under the best cultivation, could not yield heavy crops. There are, however, vast pasture-lands of very good quality. *Crops.* The principal is barley, then rye, oats, wheat, potatoes, flax, hemp, a little tobacco, and fruit. *Fishing* is the chief branch of industry along the coast. The cod fishing of Lofoden is considered the most valuable, the yield being estimated at 16,000,000 marketable fish. Another fishing is that of Finmark. Spawning fish form only a small part of this fishery; the most abundant catch is from the cod that follow in the trail of the lodde; the catch appears entirely to depend upon the shoals of these small fish, which annually swarm along the coast and the fiords of Finmark. In the province of Mordland and Tromsoe the herring fishery is likewise carried on, and has proved to be not only of importance as furnishing daily provision to the inhabitants, but furnishing the most valuable bait for the Lofoden fishery. *Trade.* The average value of the total imports into Norway in the five years 1866–70 was 24,000,000, and of the exports 19,600,020 specie daler. Of the imports, 36 per cent. came from Great Britain, 35 from Germany, 10 from Russia, 6 from France, and 5 per cent. from Denmark and Sweden. About one-third of the total exports were shipped to Great Britain, one-sixth to Germany, and one-seventh to France. *Money.* Specie-daler = 5 marks = 120 shillings = 4*s.* 5½*d.* *Weights and Measures.* Pund = 1·1 lb. avoir.; tod = 12·02 Eng. inches; kande = 3·3 imp. pints.

NOTARY-PUBLIC is a person duly appointed to attest deeds and writings; he also protests and notes foreign and inland bills of exchange and promissory notes; translates languages and attests the same, enters and extends ships' protests, &c.

NOTE is a minute of anything relating to business taken *short* at the time of any transactions occurring.

NOTE, *promissory*, a writing upon stamped paper, promising the payment of a certain sum, at a stated period. *See* BILLS OF EXCHANGE.

NUTS, or HAZEL-NUTS [Ger. *Haselnüsse*, Du. *Hazelnooten*, Da. *Hasselnödder*, Sw. *Hasselnotter*, Fr. *Noisettes*, *Avelines*, It. *Naccinole*, *Avelane*, Sp. *Avellanas*, Port. *Avellãas*, Rus. *Orechi*, Pol. *Loskowy orseck*, Lat. *Avellanæ*]. There are three species of nut trees, viz.: (1.) The *Corylus avellana* (from Avellino, in Italy, where they were first cultivated) or hazel, of which the filbert is a variety. (2.) *Corylus rostrata* or American cuckold nut. (3.) *Corylus columbo*, Constantinopolitan nut. They are all of the large shrub kind, hardy and deciduous; and have several varieties valuable for their nuts. These nuts are more nourishing than walnuts, and also harder to digest. To come to perfection they require a dry season; much rain will destroy them. The kernel of the fruit has a mild, farinaceous, oily taste, agreeable to most palates. The oil expressed from them is little inferior to the oil of almonds.

NUTMEG [Ger. *Muskatennüsse*, Du. *Muskaät*, Da. *Muskad*, Sw. *Muskot*, Fr. *Muscades*, *Noix muscades*, It. *Noce muscada*, Sp. *Moscada*, Port. *Noz mascada*, Rus. *Musskatnue oreschki*, Pol. *Muszkatowa galka*, Lat. *Nux moschata*]. There are two sorts of nutmegs, the one male and the other female. The female is that in common use; the male is longer and more cylindric, but it has less of the fine aromatic flavour than the other. The seeds or kernels called nutmegs have been long used both for culinary and medical purposes. The tree, in size and foliage, resembles the pear tree; it attains the height of thirty feet, producing numerous branches, which rise together in stories. The bark of the trunk is of a reddish-brown, but that of the young branches is of a bright green colour. The leaves are nearly elliptical, pointed, undulated, on the upper side of a bright green, on the under whitish. The flowers are small, and male and female on separate trees; they are succeeded by the fruit, which is covered with an external green substance, similar in its form to the common walnut, but more fleshy and full of juice. It is nine months before the fruit comes to perfection. The nutmeg differs in goodness according to the age of the tree, the soil, the position, and mode of culture. The round nutmeg is preferred to that which is oblong; and that fruit is more particularly esteemed which is fresh, moist, heavy, of good smell, and an agreeable though bitter flavour, and which yields an oily juice when pricked.

Nux-Vomica, a flat, compressed, round kernel of a fruit, somewhat downy, and of a very firm texture; it has no smell, but is of a very bitter taste. We have it only from the East Indies, together with another drug, the *lignum colubrinum*, the tree on which the nux-vomica grows. This tree, which is extremely large, is principally met with in Malabar and Coromandel. The species are three: the *nux vomica, colubrina,* and *potatorum*. The surface of the nux-vomica is not much corrugated, its texture is firm like horn, of a pale greyish colour without, and various colours within, sometimes white, and sometimes brown; the largest, whitest, newest, and cleanest being the best. It is generally about the breadth of a shilling. It is extremely bitter and deleterious, though used in medicine. Nux-vomica has been suspected to have been made use of in the porter breweries, although it is so strongly narcotic as to poison dogs, fishes, &c. When it is suspected that a dog has swallowed this drug, the administering of two or three spoonfuls of vinegar will perfectly counteract its deleterious effects.

O

Oak [Ger. *Eiche*, Du. *Eik*, Da. *Eeg*, Sw. *Ek*, Fr. *Chêne*, It. *Quercia*, Sp. *Roble*, *Carballo*, Port. *Roble*, *Carbalho*, Rus. *Dub.* Pol. *Dab*, Lat. *Quercus*]. There are twenty-six species of the oak-tree; the most remarkable are: 1. The *robur*, or common English oak, from sixty to one hundred feet high, with a prodigious large trunk and spreading head. This species grows in great abundance all over England, in woods, forests, and hedge-rows, and is supposed to continue its growth many centuries. 2. The *prinus*, or chestnut-leaved American oak, grows fifty or sixty feet high; having large, oblong-oval, smooth leaves, pointed both ways, the edges sinuated-serrated, with the sinuses uniformly round. 3. The *phellos*, or willow-leaved American oak, grows forty or fifty feet high, having long, narrow, smooth, entire leaves, like those of the willow. There is a variety called the dwarf willow-leaved oak. 4. The *alba*, or white Virginian oak, grows thirty to forty feet high, having a whitish bark, with long, obliquely pinnatified, light green leaves, the sinuses and angles obtuse. 5. The *nigra*, or black Virginian oak, grows thirty to forty feet high, having a dark-coloured bark, large wedge-shaped, slightly-trilobated leaves. 6. The *rubra*, or red Virginian oak, grows about sixty feet high, having a dark-greyish bark, long, obtusely sinuated leaves, with the sinuses terminated by bristly points, and sometimes red spotted veins, but generally dying in autumn to a reddish colour, remaining on the trees late in the season. 7. The *esculus* of Pliny, or cut-leaved Italian oak, grows about thirty feet high, having a purplish bark, oblong deeply sinuated, smooth leaves, and long slender close-sitting acorns in very large cups. 8. *Œgilops*, or large prickly cupped Spanish oak, grows seventy to eighty feet high, or more, with a very large trunk, and widely spreading head, having a whitish bark, large, oblong-oval, deeply serrated, smooth leaves, the serratures bowed backwards, and acorns placed in singularly large prickly cups. This is a noble species, almost equal in growth to our common English oak. 9. *Cerris*, or small prickly-cupped Spanish oak, grows thirty to forty feet high, and has oblong-lyre-shaped, pinnatified, transversely jagged leaves, downy underneath, and small acorns placed in prickly cups. 10. The *ilex*, or common evergreen oak, grows forty or fifty feet high, having a smooth bark, oval and oblong, undivided, serrated, petiolated leaves, downy and whitish underneath. The varieties are, broad-leaved, narrow-leaved, and sometimes with sawed and prickly leaves. 11. The *gramuntia*, or Montpelier holly-leaved, evergeen oak, grows forty to fifty feet high; and has oblong-oval, close-sitting, sinuated-spinous leaves, downy underneath, bearing a resemblance to the leaves of holly. 12. The *suber*, or cork-tree, grows thirty to forty feet high, having a thick, rough, fungous cleft-bark, and oblong-oval, undivided, serrated leaves, downy underneath. 13. The *coccifera*, scarlet, or kermes oak, grows from fourteen to fifteen feet high, branching all the way, and of bushy growth, with large oval, undivided, indented-spinous leaves, and producing small glandular excrescences, called kermes or scarlet grain, used by the dyers. The small scarlet glands found in this tree are the effects of certain insects depositing their eggs betwixt the bark of the branches and leaves, causing an extravasation of the sap, and forming the excrescence or substance in question, which, being dried, is the kermes, or scarlet pastel. 14. The *Molucca*, or Moluccan oak, commonly called American live oak, grows about forty feet high, having oval, spear-shaped, smooth entire leaves, and small oblong, eatable acorns. The English oak claims precedence as a timber tree, for its prodigious height and bulk, and the superiority of its timbers. All the various kinds will prosper in any middling soil and open situation, though in a loamy soil they are generally more prosperous.

Oakum, old ropes untwisted and pulled out into loose hemp, in order to be used in caulking the seams, tree-nails, and bends of a ship, for stopping and preventing leaks.

Oars are generally cut out of fir timber; those for barges are made out of New England or Dantzic rafters.

Oats [Ger. *Hafer*, Fr. *Avoine*]. The following species of this grain are natives of England. (1.) The tall oat grass. (2.) The bearded oat grass. (3.) The yellow oat grass. (4.) The naked oat grass. (5.) The meadow oat grass. (6.) The rough oat grass. (7.) The common oats cultivated in our fields Oats are principally used for feeding horses in England, and in the north for making bread after they have been reduced into meal by grinding and cleaning. The best oats should be white, clean, of a large grain, well filled, and heavy.

Observation, among navigators, implies the taking the sun's or stars' meridian altitude, in order thereby to find the latitude of the place required.

Ochre [Ger. *Ocher*, *Oker*, Du. *Oker*, Da. *Ocker*, *Ocher*, Sw. *Ockra*, *Ochra*, Fr. *Ochre*, *Ocre*, It. *Ocra*, *Ocria*, Sp. *Ocre*, Port. *Ocra*, *Ochre*, Rus. *Wochra*, Pol. and Lat. *Ochra*], a genus of earth, slightly coherent, and composed of fine, smooth, soft, argillaceous particles, rough to the touch, and readily diffusible in water. It is a combination of alumina and red oxide of iron. Ochres are of various colours, as red, blue, yellow, brown, green, &c. They are to be found in greater abundance in England and Italy than in any other part of the world. Ochres are of extensive use as colours not only in oil but in water-painting. The colours of every species of ochre may be varied by means of fire, and thus brown and yellow ochres are frequently turned to red pigments.

Octavo signifies a sheet of paper folded into eight leaves.

Offing, or **Offin**, is that part of the sea a good distance from the shore, where there is deep water, and no need of a pilot to conduct the ship; thus, if a ship from shore is seen sailing out to seaward, they say she stands for the offing; and if a ship, having the shore near her, has another a good way without her, or towards the sea, they say that ship is in the offing.

Oil [Ger. *Oel*, Du. *Oli*, *Olie*, *Oly*, Da. *Olje*, Sw. *Olja*, Fr. *Huile*, It. *Olio*, Sp. *Aceite*, Port. *Oleo*, Rus. *Maslo*, Pol. *Oley*, Lat. *Oleum*]. There are two classes of oils exceedingly different from each other; namely, fixed oils and volatile oils. *Fixed oils* are distinguished by the following characters:—1. Liquid, or easily becoming so when exposed to a gentle heat. 2. An unctuous feel. 3. Very combustible. 4. A mild taste. 5. Boiling-point not under 600°. 6. Insoluble in water and alcohol. 7. Leave a greasy stain upon paper. Those oils which are called also fat or expressed oils are numerous, and are obtained, partly from animals and partly from vegetables, by simple expression — as instances may be mentioned, whale or train oil, obtained from the blubber of the whale; olive-oil, obtained from the fruit of the olive; linseed-oil and almond-oil, obtained from linseed and almond kernels. Fixed oils may also be extracted from poppy-seeds, hemp-seeds, beech-mast, birch-tree, and many other vegetable substances. The affinities of fixed oils are, lime, barytes, fixed alkalies, magnesia, ammonia, oxide of mercury, other metallic oxides, alumina. The importance of fixed oils is well known. Some of them are employed as seasoners of food; some are burnt in lamps; some form the basis of soap: not to mention their utility in painting, and many other important purposes which they serve. *Volatile oils*, called also essential oils, are distinguished by the following properties:—1. Liquid; often almost as liquid as water; sometimes viscid. 2. Very combustible. 3. An acrid taste, and a strong, fragrant odour. 4. Boiling-point not higher than 212°. 5. Soluble in alcohol, and imperfectly in water. 6. Evaporate without leaving any stain on paper. By this last act it is easy to discover whether they have been adulterated with any of the fixed oils. Let a drop of the volatile oil fall upon a sheet of writing-paper, and then apply a gentle heat to it. If it evaporates without leaving any stain upon the paper, the oil is pure; but if it leaves a stain, it has been contaminated with some fixed oil or other. Volatile oils are almost all obtained from vegetables, and they exist in every part of the plants; the root, the bark, the wood, the leaves, the flower, and even the fruit, though they are never found in the substances of the cotyledons; whereas the fixed oils, on the contrary, are almost always contained in these bodies. When the volatile oils are contained in great abundance in plants, they are sometimes obtained by simple expression. This is the case with oil of oranges, of lemons, and of bergamot; but, in general, they can only be obtained by distillation. The part of the plant containing the oil is put into a still with a quantity of water, which is distilled off by the application of a moderate heat. The oil comes over along with the water, and swims upon its surface in the receiver. By this process are obtained the oils of peppermint, thyme, lavender, and a great many others, which are prepared and employed by the perfumer. Others are procured by the distillation of resinous bodies. This is the case in particular with oil of turpentine, which is obtained by distilling a kind of resinous juice, called turpentine, that exudes from juniper.

OIL OF TURPENTINE. Upon making turpentine, the sap which collects in a hole at the bottom of the tree is put into a basket. The part which runs through constitutes the turpentine, and the thicker matter which remains in the basket they put into a common alembic, adding a large quantity of water. They distil this as long as any oil is seen swimming upon the water. This oil, separated from the surface, is the common limpid, essential oil, called spirit of turpentine. The remaining matter at the bottom of the still is common yellow rosin.

OILY GRAIN [Ger. *Sesam*]. The produce of a plant of which there are three species. It is called the sesamum. The Oriental sesamum grows naturally in India, and is an annual plant. It is chiefly to be met with on the Malabar coast and in Ceylon. The Sesamum indicum, another species, grows also in many parts of India. The first is frequently cultivated in Africa and the East generally as a pulse. An oil is made from the seed which will keep good for many years. Nine pounds of this seed have yielded as much as two quarts of oil.

OLIBANUM, a dry, resinous substance, obtained from the Juniperus Lycia, and chiefly collected in Arabia. It is the frankincense of the ancients. It is in transparent, brittle masses, about the size of a chestnut. Its colour yellow. It has little taste, and when burnt, diffuses an agreeable odour. Alcohol dissolves it, and with water it forms a milky liquid. When distilled, it yields a small quantity of volatile oil. Olibanum is to be chosen whitish yellow, pure, dry, and as clear as possible.

OLIVE OIL [Ger. *Baumöl*, Du. *Boomöli*, Da. *Bomolje*, Sw. *Bomolja*, Fr. *Huile d'olives*, It. *Olio d'uliva*, Sp. *Aceite de aceitunas*, Pol. *Oleo das azeitonas*, Rus. *Derewânnoe masslo*, Pol. *Oleiva*, Lat. *Oleum olivarum*]. The oil is undoubtedly that part of the produce of the olive trees which is of the greatest value. The quality of it depends on the nature of the soil where the trees grow, on the kind of olive from which it is expressed, on the care which is taken in the gathering and pressing of the fruit, and likewise on the separation of the part to be extracted. Unripe olives give an intolerable bitterness to the oil. When they are over-ripe, the oil has an unguinous taste. The southern parts of France, and also Italy, Candia, and Sicily, yield the greatest quantities. The provinces in Naples most abundant in oils are Bari, Otranto, Calabria, and Abruzzo. Large quantities are annually exported from Gallipoli. Sicilian oil is inferior to Calabrian, and the latter to the Gallipoli. The Calabrian and Gallipoli oils have less foot, and more colour and substance, than those of Sicily. This superior quality of the Gallipoli oil may in some measure proceed from the nature of the soil; but it arises more particularly from better management in manufacturing and refining it. This oil is bright and clear. The district of the Dietro Marino produces the best oil in Calabria, in goodness very little inferior to that of Gallipoli. Milazzo is the place which, in Sicily, produces the greatest quantity of oil; then Sciacca; then Cefalu, Tara, Mistretta, Pettineo, and St. Stefano. The oils from Milazzo and Sciacca are chiefly consumed in the soap manufactures; those from Pettineo and Mistretta are the best for use with food, but their consumption is limited to Italy, as they have, like all oils produced in Naples and Sicily, a rank taste and smell. This country is supplied with oil from Leghorn and Genoa, known under the denomination of Lucca and Florina saw oil. The parts of France which afford the greatest quantity of oil are Florence and Languedoc. The French oils are excellent. These oils are usually exported from Marseilles. The oil from the island of Candia is nearly similar to Sicilian oil, and is fit only to be employed in the manufacture of soap. The best oil should be clear, of strong body, free from foot or sediment, of a perfectly sweet taste and smell, and a bright gold colour.

OLIVETS, in the commerce of the coast of Africa, a name given to mock pearls, or a species of bugle in form somewhat similar to the fruit of an olive-tree. They are usually white, and are much prized by the natives of Senegal.

OMNIUM, a term used by stock-jobbers to express all the articles included in the contract between Government and the original subscribers to a loan.

ONION [Ger. *Zwiebel*, *Zippel*, Du. *Uyen*, *Ajuin*, Da. *Rödlög*, Sw. *Rödlök*, Fr. *Oignon*, It. *Cipolla*, Sp. *Cebolla*, Port. *Cebola*, Rus. *Luk*, Pol. *Gebula*, Lat. *Cepa*]. The most reputed sorts of onion are the Strasburg, the Spanish, the Portuguese, and the Egyptian. The Spanish and Portuguese onions are most famous in this country, and vast quantities of them are imported in baskets.

ONYX [Ger. and Sw. *Onyx*, Fr. *Onix*, *Onice*, Sp. *Onique*, Port. *Onix*, Pol. *Onich*, *Oniks*, Lat. *Onyx*], one of the semipellucid gems, with variously coloured zones, but none red; being composed of crystal, debased by a small admixture of earth, and made up either of a number of flat plates, or of a series of coats surrounding a central nucleus, and separated from each other by veins of a different colour, resembling zones or belts. There are four species of this gem: 1. A bluish-white one, with broad white zones. 2. A very pure onyx, with snow-white veins. 3. The jasp-onyx, or horny onyx, with green zones. 4. The brown onyx with bluish-white zones. The ancients attributed wonderful properties to the onyx, and imagined that if worn on the finger it acted as a cardiac. It is found on the shores of rivers in the East Indies, New Spain, and other parts of America, as also in Germany; but the latter are greatly inferior to the American kind. The Oriental are the most beautiful of all.

Opal [Ger. and Sw. *Opal*, Fr. *Opales*, It. *Opalo*, Sp. *Opalo*, *Piedra iris*, Port. *Opala*, Lat. *Opalus*]. This stone is found in the East Indies, in Egypt, Arabia, Cyprus, Persia, and Tartary, and in some parts of Europe, especially in Hungary, in the Crapacks near the village of Czennizka. When first dug out of the earth it is soft, but it hardens and diminishes in bulk by exposure to the air The substance in which it is found is a ferruginous sandstone. The opal is always amorphous. Its fracture is conchoidal. Commonly somewhat transparent. Specific gravity from 1.958 to 2.540. The lowness of its specific gravity, in some cases, is to be ascribed to accidental cavities which the stone contains. These are sometimes filled with drops of water. Some specimens of opal have the property of emitting various-coloured rays, with a particular effulgence, when placed between the eye and the light. The opals which possess this property are distinguished by lapidaries by the epithet oriental, and often by mineralogists by the epithet nobilis. This property rendered the stone much esteemed by the ancients.

Opium [Ger. *Opium*, *Trockner mohnsaft*, *oder seblafsaft*, Fr. *Opium*, It *Oppio*, Sp. and Port. *Opio*, Lat. *Opium*] is obtained from the *papaver album*, or white poppy, a plant which is cultivated in great abundance in India and other parts of the East. The poppies are planted in a fertile soil, and well watered. After the flowering is over, and the seed capsules have attained nearly their full size, a longitudinal incision is made in them about sunset for three or four evenings in succession. From these incisions there flows a milky juice which soon concretes, and is scraped off the plant and wrought into cakes. In this state it is brought to Europe. Opium thus prepared is a tough, brown substance, has a peculiar smell, and a nauseous, bitter, acrid taste. It becomes softer when held in the warm hand, and burns very readily and strongly. It is a very compound substance, containing sulphate of lime, sulphate of potass, an oil, a resinous body, an extractive matter, gluten, mucilage, &c., besides the peculiar narcotic principle to which, probably, it owes its virtues as a soporific. The *meconium*, or common opium, is prepared in the East Indies by pressing the poppy heads, that have been already cut. The juice that comes out of them, mixed with the least beautiful of the other drops, is kneaded with water, and made into cakes, which are exported. An excessive fondness for opium prevails in all parts of Turkey and the East Indies. In vain the Chinese authorities have condemned its use, the consumption still goes on. It is greater, however, at Malacca, Borneo, the Moluccas; Java, Sumatra, &c. The islanders smoke it with their tobacco; those who are desirous of attempting some desperate deed intoxicate themselves with the fumes. The number of persons in China given to the consumption of opium has been estimated at three millions, and the average quantity smoked by each individual is about 17⅓ grains a day. The consumption of Indian opium in China amounts to about 60,000 chests of 140 lb. each, the value of which may be estimated at 37,000,000 dollars. Notwithstanding severe penalties, imprisonment, temporary banishment, even death, the number of those who smoke opium seems to be as great as ever.

Opobalsamum [Ger. Du. Da. and Sw. *Opobalsamum*, Fr. *Opobalsamum*, *Baume de Gilead*, It. Sp. and Port. *Opobalsamo*, Lat. *Opobalsamum*], balsam or balm of Gilead; called also *Balsamum Judiacum*, *Syriacum*, *Meccha*, and golden balsam. It is admitted, even by the Turks, that on account of the great price of this article, it is very difficult to find it genuine, it being adulterated immediately on its filtration from the tree which yields it, and scarcely to be found pure anywhere. The marks of its supposed purity are, a very yellow colour, perfectly transparent; a strong fragrant smell, with something of the lemon or citron flavour, and a bitter, sharp, and astringent taste. It is also very tenacious and glutinous, sticking to the fingers, and capable of being drawn into long threads.

Opoponax [Ger. Du. Da. and Sw. *Opoponax*, Fr. *Opopanax*, It. *Opoponasso*, Sp. and Port. *Opoponaca*, Lat. *Opoponax*], a resin obtained from the *pastinaco opoponax*, a plant which is a native of the countries round the Levant. The gum resin is obtained by wounding the roots of the plant. The milky juice, when dried in the sun, constitutes the opoponax. It is in lumps of reddish-yellow colour, and white within, of a bitter and acrid taste. With water it forms a milky solution. Specific gravity 1·62. Opoponax is usually brought to us in granules or drops, and sometimes in large masses, formed by a number of the drops connected by a quantity of substance of the same kind; but these are usually loaded with extraneous matter, and are greatly inferior to the loose kind.

Oranges [Ger. *Pomeranzen*, Du. *Oranjen*, Da. *Pomerantser*, Sw. *Pomeranser*, Fr. *Oranges*, It. *Melarance*, Sp. *Naranjas*, Port. *Laranjas*, Rus. *Pomeranzii*, Pol. *Pomeranczy*, Lat. *Aurantia mala*]. This fruit is the produce of the *Citrus aurantium*, of which the varieties are:—1. Seville orange. This is a very handsome tree, and the hardiest of any, as in this country it shoots freely, produces large and beautiful leaves, flowers, &c. The fruit of this variety is large, rough-rinded, and of excellent quality for economical uses. 2. The China orange. This tree has moderately-sized leaves, a smooth, thin rind, and sweet fruit; of this there are several varieties in warm countries, where they grow in the open ground. The orange tree in general has an upright smooth trunk, divided upwards into a branchy regular head, from five to ten and twelve feet high, oval, spear-shaped, entire leaves, having winged footstalks, and numerrous white flowers at the sides of the branches, succeeded by globular fruit compressed at each end. The flowers appear principally in May or June. The fruit continues setting in July, and ripens the year following. Great quantities of Seville oranges are consumed in Great Britain and Ireland, which are chiefly brought from Spain and Portugal. The Spanish oranges are decidedly superior to the Portuguese, containing much more juice than the latter, their rinds being by no means so thick and spongy. Malta furnishes abundance of oranges, which in size, flavour, and quantity of substance are not to be exceeded by those of any other part of the world. They do not, however, keep so well as Spanish and Portuguese fruit.

ORCHILLA-WEED, ORCHELLA, or ARCHELLA [Ger. *Orseille*, Du. *Orseille*, *Orcel*, *Orchillie*, Da. *Orselje*, *Farvemos*, Sw. *Orsilja*, Fr. *Orseille*, It. *Oricello*, *Orcella*, *Rocella*, *Raspa*, *Raspo*, *Respio*, Sp. *Orchilla*, Port. *Orsella*, *Orzella*, Rus. *Arsel*, Pol. *Mech farbierski*, Lat. *Rocella*]. The lichen rocella, or orchella weed, is a whitish moss, yielding a rich purple tincture, used for dyeing. It is found in abundance in several of the islands of the Archipelago, and also in some of those near the African coast, particularly in the Canary and Cape de Verd islands. It grows partly in single, partly in double stems, to the height of about two inches, of a light, or sometimes dark grey colour.

ORGANZINE, is silk prepared for forming the warp of the stuff designed to be woven in the loom.

ORGOL, or ARGOL, the tartar or salt from the lees of wine, used by dyers in giving a madder red colour, and by pinmakers in whitening their pins.

ORIGANUM. An essential oil is kept at the shops, under the name of oil of origanum, which is simply the oil obtained from the leaves of the wild marjoram.

ORPIMENT [Ger. Du. Da. and Sw. *Operment*, Fr. *Orpiment*, It. *Orpimento*, Sp. *Oropimente*, Port. *Ouropimente*, Rus. *Awripigment*, *Operment*, Pol. *Aurypigment*, *Zlotokost*, Lat. *Auripigmentum*], a semi-metal, usually found in copper mines. Its colour is always yellow, intermixed with shades of other colours, such as green, red, orange, &c. What is usually called red orpiment, or red arsenic, is only the yellow orpiment, heated to a great degree, and put into a crucible with oil of hemp-seed, olives, or nuts. Painters, farriers, and others use much of this mineral; but as it is a violent corrosive, it should be employed with great caution. White orpiment is the same with arsenic.

ORRIS, or IREOS [Ger. *Violenwurzel*, Du. *Violwortel*, Da. *Violrod*, Sw. *Fiolrot*, Fr. *Iris de Florence*, It. *Ireos*, Sp. *Raiz de lirio de Florencia*, Port. *Lirio florentino*, Rus. *Fialkowoi koren*, Pol. *Fiolkowy korzen*, Lat. *Iris florentina*], a sweet-scented powder produced by pulverizing a root of the same name. This root is white, about the thickness of a man's thumb, of an oblong form, and is brought to us dry from Florence, in the neighbourhood of which city it grows spontaneously. Its stalk is similar to that of the *iris nostras*, but its leaves are more upright, and its flowers white. When taken out of the earth this root is encumbered with many fibres, which are cut off, and it is then dried. Orris root should be chosen plump, heavy, compact, clean, very white, of a sweet and pleasing violet-like odour, and of a sharp and rather bitterish taste.

OSTRICH-FEATHERS [Ger. *Straussfedern*, Du. *Struisveeren*, Da. *Strudsfiere*, Sw. *Strussfjädrar*, Fr. *Plumes d'autruche*, It. *Piume di strozzo*, Sp. *Plumas de avestruz*, Port. *Plumas de abestruz*, Rus. *Strusowii penja*, Pol. *Strussie piora*], the fine feathers of the ostrich; the ancients used these plumes on their helmets; our military wear them in their hats; and the ladies make them an ornament in their head-dress. The colour is generally black and white; though some of them are said to be grey. Ostrich-feathers are dyed and dressed by the feather-dressers. They are brought to us from Africa, and particularly from the coast of Barbary. They are more prized as ornaments than those of any other bird; not only on account of their brilliant white hue, but their length, their suppleness, the beauty of their fringe, and the facility with which they may be cleaned, or stained of any colour, without the opposition of that tenacious oil so common in other species of feathers. They are divided into those of the male bird, those of the female, and ostrich-down or estrich. The feathers of the male ostrich are peculiarly white, and of the finest quality: the best of this sort are the feathers taken off the backs and the upper parts of the wings of the bird; the less these are exposed to friction of any kind, the better they preserve their original beauty. The second quality of this sort consists of the feathers plucked from the wings only; the third from the extremity of the wings, and the fourth from the tail; these last are redivided into three kinds according to quality. The finest feathers of the female have usually a greyish cast, which considerably detracts from their beauty and value. These are divided into white, grey, and feathers of a mixed hue.

OTTA, or OTTAR OF ROSES, the essential oil of roses. It comes to us under this name from Bengal, and is of too high a price to become an article of commerce in this country. From a variety of accounts we learn that it is obtained in the usual manner, viz., by the distillation of rose-leaves with water. The quantity of essential oil to be obtained from the rose is very precarious and uncertain, as it depends not only on the skill of the distiller, but also on the quality of the roses, and the favourableness of the season; even in Europe, when the chemists are so perfect in their business, some, as Tachenius, obtained only half an ounce of oil from one hundred pounds of roses; Hamberg obtained one ounce from the same quantity, and Hoffman above two ounces; the roses, in these instances, being stripped of their calyxes, and only the leaves used. It is said to be equal in fragrance to the new-blown rose. This may be true of the oil when newly distilled; but in the few specimens which have come under our observation, the difference in scent appears to be nearly as great as between most other essential oils, and the vegetables which afford them.

OUNCE, a small weight, the sixteenth part of a pound *avoirdupois;* and the twelfth part of a pound *troy:* the ounce *avoirdupois* is divided into eight drams, and the ounce *troy* into twenty pennyweights.

OUNCE-SKINS. The ounce is scarcely inferior in size to the leopard. Its colour is dull white, with a slight yellowish or tawny cast, and the whole is scattered over with differently-sized spots, and markings of black. About the head these spots are small, numerous, and roundish: along the back they form a kind of abrupt or irregularly interrupted stripes; whilst on the sides and limbs they are variously shaped, forming in some places angular, and others somewhat round or oval marks, with a central space included; and on the legs and tail they are black and scattered. This animal is a native of several parts of Africa and Asia. The skins are usually applied to the same purposes as those of the leopard and lynx.

OYSTER, a well-known and generally diffused shell fish. "The British trade in oysters ranks in importance with that in herring, and affords employment to a numerous body of men. In Jersey alone about 250 boats are employed, and 200,000 bushels of oysters are annually exported. In France the oysters of Cancalle, in Brittany, and Dieppe are most esteemed. The season opens on the 5th of August, and terminates on the 12th of May."

P

PADDY, a term applied to rice in the husk.

PAGODA, the name of several Indian gold coins. Those that are generally met with weigh 52·85 troy grains, and are worth about *7s. 10d.*

PAKFONG, a Chinese alloy, composed of copper, nickel, and zinc.

PALM OIL [Ger, *Palmöl*, u. *Palmolie*, Da. *Palmeolie*, Sw. *Palmolja*, Fr. *Huile de Palme*, *Huile de Senegal*, *Pumicin*, It. *Olio di Palma*, Sp. *Aceite de palma*, Port. *Oleo de palma*, Lat. *Oleum palmæ*, seu *Elais*]. This oil is said to be the produce of the *palma spinosa major*, the fruit or nuts of which are full of oil. It is obtained by boiling them in water, when the oleaginous particles rise to the surface, and are skimmed off and strained for use. The oil, as it comes to us, is about the consistence of an ointment, and of an orange colour; of a strong, though not disagreeable smell, and very little taste. By long keeping it loses its colour, and becomes white, when it ought to be rejected. Alcohol dissolves about 1-75th of its weight, and ether about 1-6th. The tree which yields palm-oil grows in most parts of Asia, Africa, and America, more especially on the coast of Guinea, in the Cape de Verd Islands, and in Jamaica and Barbadoes.

PANAMA, a free port of New Granada, a republic of South America, occupying the N.W. corner of that continent, between *Lat.* 3° 36′ S. and 12° 30′ N., and *Long.* 65° 50′ and 83° 5′ W. The *Pop.* of the republic is estimated at 2,243,837, and the *area* at 333,000 square miles. *States.* Antioquia, Boliva, Boynea, Cauca, Cundinamarca, Magdalena, Panama, and Santander. *Cap.* Bogota, or Santa Fe de Bogota, which is also the cap. of the State of Cundinamarca. *Imports, Commerce, bays and ports.* Beside the free ports Panama and Colon (Aspinwall), are Carthagena, Santa Maria Savanilla, and Rio Hacha, on the Atlantic; and Bueneventura and Tumaco, on the Pacific. Chiriqui Lagoon and Porto Bello, on the Atlantic, are also excellent ports; beside which, on the Pacific, may be mentioned Humboldt Harbour, Cupica, and San Juan, or Charambira. The Republic is characterized by great diversities of soil and climate. Its heart consists of a series of great table-lands or plateaus, from 8,000 to 10,000 feet in elevation. Fruit and grain are produced in the greatest profusion on this plateau, and more than one-third of the population of the country is concentrated upon it. The fauna and flora of New Granada combine almost the entire range of the tropical, inter-tropical, and temperate zones. In a single day's journey a traveller may encounter the four seasons of the year, and observe the vegetable peculiarities of the three central zones of the globe. He will find wheat, potatoes, the bread-fruit, the *quina* (Peruvian bark), *pitayo* cedar, balsam of Tolu, vanilla, lignum vitæ, mahogany, wax tree, caoutchouc. Pearls, mother-of-pearl, tortoiseshell, and coral abound on the coasts of Panama and Carthagena. From Costa Rica to Venezuela, New Granada abounds in rich auriferous alluvions of great extent. There is hardly a state but possesses more or less gold in its soil. It is claimed that Choco is exceedingly rich in that metal. The auriferous sands of Antioquia afford results very nearly coinciding with those of California. Choco produces nearly all the platinum, and Muzo the emeralds, which are now found in foreign markets; and in various parts of the country are mines of silver, copper, lead, iron, quicksilver, coal, amethysts, and other varieties of rare and valuable stones and metals. The great coal-bed of Cali, it is believed, extends beyond the Cordilleras to the Pacific. *Commerce.* The interior commerce is greater than the exterior. The annual exports amount to about 14,000,000 dols., and the principal articles are: Gold, platinum, silver, emeralds, &c.; pearls, tobacco, Panama hats, quinine, dye-woods, coffee, hides, and maize. Industry in the country is generally backward, and travelling is difficult from the absence of good roads. Panama is a fortified seaport on the Gulf and south coast of the Isthmus of the same name, in the Pacific. *Pop.* about 18,000. Its harbour is safe, and the surrounding country is fertile; the city has some trade in South American produce. Panama derives its chief importance from the establishment of a railway across the Isthmus. This work was commenced in 1850, with a force of 5,000 men, and five years after, the first train passed from sea to sea. This work cost about £1,500,000. The average annual income of the road since its completion has been about £260,000; expenses, £70,000. *Imports* consist principally of cottons, linens, lace, shoes, hosiery, iron, ale, salt, hardware, perfumery, drugs, stationery, straw hats, &c., valued at about £1,104,490. *Exports.* Pearl shells, hides, sarsaparilla, pearls, india-rubber, and Corozo nuts, valued at about £1,098,850. *Bank.* Bank of Panama. *Money.* The integer of account is the piastre, or dollar, divided into eight reals. The *Weights and Measures* are the same as those of Spain. *Chagres*, the port of, is within the mouth of the river of that name, in *Lat.* 9° 18′ 6″ N., *Long.* 79° 59′ 2″ W. At the mouth of the river there is a bar, which has only 10 ft. to 15 ft. of water; through the bar, the river deepens to from 4 to 6 fathoms. *Colon* is situated on the east side of the Isthmus, as Panama city is on the west, and the transit occupies four miles by railway.

Panthers' Skins. The panther measures about six feet and a half, and sometimes nearly seven feet from nose to tail, which last is about three feet long. The colour of the panther is a bright and beautiful tawny yellow, thickly marked all over the upper parts of the body, shoulders, and thighs with roundish black spots, disposed into circles, consisting of four or five separate spots; and there is commonly but not always, a central spot in each circle, in which particular, as well as in its superior size and deeper colour, the panther differs from the leopard. On the face and legs the spots are single, and along the top of the back is a row of oblong spots, which are still longer as they approach the tail. The breast and belly are white; the former marked with transverse dusky stripes, the latter and the tail with large, irregular, black spots. The skins of the panther are brought from Africa, and are employed in the same manner as those of the leopard.

Paper [Ger. and Du. *Papier*, Da. *Papir*, Sw. *Pappar*, Fr. *Papier*, It. *Carta*, Sp. and Port. *Papel*, Rus. *Bumaga*, Pol. *Papier*, Lat. *Charta*], sheets of thin matter, made of some vegetable substance. Papers are of various kinds. With regard to colours, they may be divided into white, brown, blue, &c.; with regard to quality, into fine, second, bastard, superfine, &c.; with regard to use, into writing, printing, pressing, cap, cartridge, copy, chancery, post, &c.; with regard to dimensions, into demy, medium, crown, foolscap, pot, royal, super-royal, imperial, elephant, atlas, &c.; with regard to country, into German, Lombard, Rochelle, Genoese, Dutch, English, &c. We have also printed paper to hang rooms with; stamped paper to write obligations, deeds, and contracts upon; ruled paper for books of account, &c., to which may be added cut and gilt paper for letters, &c. Blue paper is used for wrapping up sugar-loaves, linen, &c. Whitish-brown, for parcels of almost every kind. Teint, or demi-teint paper, a paper for designing on, is either, blue, brown or bistred. Bistred, or bisterd paper, is white paper washed over with a sponge dipped in soot-water. Its use is to save the labour of the crayon in places which are to be shadowed the same depth with the teint of this paper: for light places they are made with chalk.

Paper-Credit is the paper circulating in the country, and issued upon the security of the Bank of England; and as long as the specie is adequate to cover the amount of the notes issued, so long may such paper be considered as money, of which it is the representative. The mode of accepting and negotiating bills among merchants falls also within the denomination of *paper-credit*.

Par. When two things of different denominations are equal to each other in value, they are then said to be with respect to each other equal, or at par. The public funds are said to be so much above or below par, as they exceed or fall short of sterling value; thus, when the Three per Cents. were at £98 they were said to be 2 per cent. below par, or £100 sterling in value. Gold and silver are at par with the coin of the country when the coin melted down will sell for the same that it passed current for in the form of money; the exchange between two countries is said to be at par when the moneys of each pass for their real value in bullion, without any fictitious depression or value arising from the plenty or scarcity of the one or the other.

Paranthine. This stone, so called by Mr. Hauy because its crystals have frequently a dull appearance as if they had effloresced, has not yet been found, that we know of, except at Arendahl, in Norway. Its prismatic crystals are variously grouped in the iron ore of Langloe, and accompanied with brown mica, quartz, garnet, strahlstein, carbonate of lime, &c.

Parcel is a term indifferently applied to small packages of wares, and to large lots of goods. In this latter sense, 20 hogsheads of sugar, or more, if bought at one price, or in a single lot, are denominated "a parcel of sugar."

Parchment [Ger. *Pergament*, Du. *Perkament*, Da. and Sw. *Pergament*, Fr. *Parchemin*, It. *Cartapecora*, *Pergamena*, Sp. *Per* *gamino*, Port. *Pergaminho*, Rus. and Pol. *Pergamin*, Lat. *Pergumena Membrana*], the skin of sheep or goats prepared after such a a manner as to render it proper for writing upon, covering books, &c. What is called vellum is only parchment made of the skins of sucking calves. This has a fine grain, and is very white and smooth.

Partial Loss implies a damage which a ship may have sustained in the course of her voyage, from any of the perils mentioned in the policy of insurance. When applied to the cargo, it means the damage which goods may have received, without any fault of the master, by storm, capture, stranding, or shipwreck, although the whole or the greater part thereof may arrive in port. These partial losses fall upon the owners of the property so damaged, and must be indemnified by the underwriters. But the underwriters of London expressly declare, as appears from a memorandum at the foot of the policy, that they will not answer for partial losses not amounting to 3 per cent. This clause was intended to prevent the underwriters from being continually harassed by trifling demands. But at the same time that they provide against trifling claims for partial losses, they undertake to indemnify against losses, however inconsiderable, that arise from a general average. When we speak of the underwriters being liable to pay, whether for total or partial losses, it must always be understood that they are liable only in proportion to the sums which they have underwritten. Thus, if a man underwrites £100 upon property valued at £500, and a total loss happen, he shall be answerable for £100, and no more, that being the amount of his subscription; if only a partial loss, amounting to £60 or £70 per cent. upon the whole value, he shall pay £60 or £70, being his proportion of the loss.

Partner is a merchant or tradesman who embarks with another in mutual traffic, of which he shares the profit in such proportions as are agreed upon by articles entered into between them.

Part-owners are those that are concerned in ship-matters, and who have joint shares therein. And when there are part-owners of a ship, the majority may fit her out, without the consent of the rest; and if they do, such majority run all hazards, and are to partake of the profits.

Pashmeen is a kind of a down which grows between the hair of most of the wild deer and goats of Cashmere. What is used in the manufacture of shawls is collected from tame-goats in Thibet, which are plucked for it at certain times of the year. It resembles eider-down, and makes the softest and most beautiful cloth in the world. As this cloth is very expensive, and the work of the shawls is done by the hand, they are worth a great deal; and though they cost from eighty pounds to two hundred pounds each in the country, the workmen are by no means highly paid for their time and labour. A shawl which costs one hundred and forty pounds in England would cost about eighty pounds in Cashmere, after the taxes which the Maharajah levies on it had been paid. Very few shawls are sold in England now; the majority find their way to France and Russia.

Pass Hemp [Ger. *Passhanf*, Du. *Pashennip*, Da. *Pass-hamp*, Sw. *Pass-hampa*, Fr. *Chanvre pass*, *Reparon*, It. *Canape di terza sorte*, Sp. *Canamo de tercera sorte*, Port. *Linbo canhamo da terceira sorte*, Rus. *Polowka*] is hemp thrice carded, and prepared for the fabrication of cloth.

Patents. The conditions on which a patent is granted for any new invention are that such invention be *original*, and *never before executed in this country*; that it be beneficial to the public, and that the patentee give in, within three months from the date of obtaining the patent, such a specification or description of the original invention, that other persons conversant with the subject may put it in practice at the expiration of the term for which the patent is granted.

Patterns are specimens or samples of various commodities, which are either transmitted by manufacturers to their correspondents, or carried from town to town by travellers, in search of orders.

Paut, the Indian flax.

Payee, the person to whom a bill is made payable, or transferred. Also the person entitled to receive payment of any sum of money.

Payer, he who binds himself to the payment of bills, bond, or any sum of money, either verbally or by writing.

Pearls [Ger. *Perlen*, Du. *Paarlen*, Da. *Perler*, Sw. *Pälor*, Fr. *Perles*, It. *Perle*, Sp. *Perlas*, Port. *Perolas*, Rus. *Shemtschug*, *Perlu*, Pol. *Perly*, Lat. *Margaritæ*], hard, white, shining bodies, usually roundish, found in various kinds of testaceous fishes. Pearls, though esteemed of the number of gems by our jewellers, and highly valued, not only at this time, but in all ages, proceed only from a distemper in the creature that produces them, analogous to the bezoars and other stony concretions in several animals of other kinds. The fish in which the largest and finest pearls are usually produced is the East Indian pearl-oyster, as it is commonly called. Besides this shell there are many others that are found to produce pearls; as the common oyster, the muscle, and several others, the pearls of which are often very good; but those of the true India berberi or pearl-oyster are, in general, superior to all. The small or *seed pearls*, also called ounce-pearls, from their being sold by the ounce and not by tale, are vastly the most numerous and common; but, as in diamonds, among the multitudes of small ones, there are occasionally large ones found, so in pearls there are larger and larger kinds; but as they increase in size, they are proportionably less frequent, and this is the one reason of their great price. We have Scotch pearls frequently as large as small shot, some as big as a large pea, and some few of the size of a horse-bean; but these are usually of a bad shape, and of little value in proportion to their weight. The finest, and what is called the true, shape of the pearl is a perfect round; but if pearls of a considerable size are of the shape of pearl, as is not unfrequently the case, they are not less valued, as they serve for ear-rings and other ornaments. Their colour ought to be a pure white; and that not a dead and lifeless, but a clear and brilliant one: they must be perfectly free from any foulness, spot, or stain, and their surfaces must be naturally smooth and glossy, for they bring their natural polish with them, which art is not able to improve.

PEARL-ASHES [Ger. *Perlasche*, Du. *Paerelasch*, Sw. *Perlaska*, Da. *Perleske*, Fr. *Perle-asse*, *Cendres de Perle*, It. *Cenere di Perla*, Sp. *Cenizas de Perlas*, Port. *Canza de Perolis*], a kind of fixed alkaline salt. It is prepared by mixing the ashes of burnt wood with water, evaporating the clear ley, and calcining them for a considerable time in an oven moderately hot. The goodness of pearl-ashes is distinguished by their strong body and a uniform white appearance: and their value decreases in proportion to the blue cast they have; blue, then, is the most inferior sort of pearl-ashes.

PEARL-BARLEY [Ger. *Gerstengraupen*, *Perlgraupen*, Du. *Gepereldegarst*, *Peldegarst*, Da. *Bangebyg*, *Perlegryn*, Sw. *Perlgryn*, *Helgryn*, Fr. *Orge Perlé*, *Orge Mondé*, It. *Orzo Perlato o Pilato*, *Orzo Brillato o Tedesco*, Sp. *Cebada Perlada*, *Cebada Mondada*, Port. *Cevada Perlada*, *Cevada Mondada*, Rus. *Krupa*, *Krupa Perlowaga*, Pol. *Krupy*, *Krupki*, *Perlowe Krupki*, Lat. *Hordeum excoriatum*], likewise called Peeled and French Barley, is nothing more than the common barley freed of the husk by a mill, and reduced to the size of small shot, all but the very heart of the grain being ground away.

PEARL-SEED, or SEED-PEARL [Ger. *Perlsaamen*, *Saamenperlen*, Du. *Paarlzaad*, *Paerelgruis*, Da. *Perlsæd*, Sw. *Pärlfrö*, *Pärlgrus*, Fr. *Semence de Perle*, It. *Seme di Perle*, Sp. *Aljofar*, *Rostrillo*, Port. *Aljofar*, *Aljofre*], the smallest kind of pearls.

PEASE [Ger. *Erbsen*, Du. *Erwten*, Da. *Ærter*, Sw. *Arter*, Fr. *Pois*, It. *Piselli*, *Bisi*, *Erbione*, Sp. *Pesoles*, *Guisantes*, Port *Hervilhas*, *Ervilhas*, Rus. *Goroch*, Pol. *Groch*, Lat. *Pisa*], a kind of pulse, almost universally known; they are of several sorts, as white, yellow, green, and grey. They are also divided into boiling and hog pease. The former kind is proper for the nourishment of man, and particularly serviceable as sea-provision.

PEBBLE, *Scotch*, a beautiful species of pebble, whose cast is generally bluish, occasionally marked with broad transverse lines of a purplish, reddish, or brownish hue, and not unfrequently with all these colours. It is extremely hard, and is employed by lapidaries in the formation of seals. It is principally brought from Montrose and Arbroath, on the east coast of Scotland, though specimens of it are sometimes to be met with in different parts of England.

PENANG is an island belonging to Great Britain, in the East Straits Settlements, at the N. entrance of the Straits of Malacca, two miles from the province of Wellesley. *Area*, 160 square miles. *Pop.* about 39,000. *Cap.* Georgetown. The country is densely wooded where not cultivated. Cloves, tea, cotton, tobacco, coffee, sugar, nutmegs, rice, and numerous tropical fruits are grown; and the forests yield timber of an excellent kind. The *Trade* of this island appears to have amounted to £1,100,000 in 1810, and 15 years later it was still about the same amount, having varied in this period between £760,000 and £1,350,000. From 1825–6 to 1868 the total of the imports and exports has risen from £1,114,614 to £3,801,309. The advance has not been rapid, but it has been steady. Penang ships produce of its own manufacture—sugar, sago, tapioca, &c.—to the value of nearly half a million sterling. *Imports*. Principally plain cottons, coloured goods, twist, woollens, metals, &c.

PENCILS, *Camels'-hair*, [Ger. *Pinsel*, Du. *Pinseelen*, Da. *Pensler*, Sw. *Penslar*, Fr. *Pinceaux*, It. *Pennelli*, Sp. *Pinceles*, Port. *Pinceis*, Rus. *Kisrü*, *Kistki*, Pol. *Pesle*], those small brushes composed of a little wooden handle, to which is affixed a piece of quill, furnished at one end with a tuft of camels' hair, or the fur of some other animal. Although all the pencils used in painting in water colours are called camels'-hair pencils, it rarely happens that the valuable hair of the camel is employed in their formation, that of the mole, &c., being generally used as a substitute. To choose drawing-pencils, moisten them a little, and if they come to a point without splitting, they are good. The brushes used by the Chinese, made of a white hair fitted up in reeds, are very excellent for drawing, being much superior, for landscapes and many other purposes, to our camels'-hair pencils, as they are more elastic. They are not sold in common at London, but they may sometimes be met with.

PENCILS, *Black-lead* [Ger. *Bleifedern*, Fr. *Crayons noirs en Bois*, It. *Piombini in Tocco*, *Matite Piombine o Nere*, Sp. *Plumas de Lapiz*, *Plomadas*, Pol. *Olowki*], are made of a mineral substance called plumbago or black-lead, which is carburet of iron. They are of various qualities; the best are without any grit, not too soft, and that cut easily without breaking. An inferior kind is made by forming a composition of the dust of black-lead with gum or glue, which is fitted into sticks in the same manner as the best.

PENDANTS of a ship, those streamers or long colours which are split or divided into two parts, ending in points, and hung at the heads of masts, or at the yard-arm ends.

Perils of the Sea. It may, in general, be said that everything happening to a ship, in the course of her voyage, by the intermediate act of God, without the intervention of human agency, is a peril of the sea. Thus every accident happening by the violence of the winds and waves, by thunder or lightning, by driving against rocks, by the stranding of the ship, or by any other violence which human prudence could not foresee, nor human strength resist, may be considered as a loss within the meaning of a policy of insurance, and the assurer must answer for all damages sustained in consequence of such accident. But if a ship be driven by stress of weather on an enemy's coast, and is there captured, it is a loss by capture, and not by perils of the sea.

Peru, a S. American republic, extending about 1,250 miles along the coast, from *Lat.* 3° 35′ to 21° 48′ S., and from *Long.* 65° 10′ to 81° 30′ W. *Area* 502,760. *Pop.* 2,865 000. Cap. Lima. *Ports.* Callao, Iquique, Arica, Islay, Huarchaco, San José, Payta. *Minerals.* Gold is found in many places, and nearly all the mountain streams wash it down in small particles. The mountains are interspered with veins of gold and silver ores, and with copper and lead. In many places gold is found in quartz. The silver ore is particularly rich, frequently yielding from 5 to 50 per cent. This ore constitutes the great mineral wealth of the country, and presents itself in all forms and combinations, from the pure metal to the lead ore mixed with silver. Quicksilver is found in small quantities only. The Andes are very rich in copper ore; but mining is, on the whole, in a very backward state, owing to the height at which most of the mines are situated, the want of timber, and the difficulties in transporting machinery from the coast. *Vegetable production.* Almonds, ginger, balsam of copaiba, gum, copal, &c., are in abundance E. of the Andes. On the coast and W. slopes are produced the cabbage-palm, the cocoa-nut, the chocolate-nut, the cotton shrub, &c. Coffee, pepper, and tobacco, are to be found in the interior. Cotton is found in a wild state on the banks of the Amazon and its tributaries. Cinchona is scattered along the skirts of the Andes for upwards of 2,000 miles. In the plains of Caxamarca large crops of barley and wheat are raised, the latter yielding from 18 to 21 fold. *Manufactures*, the, are trifling, and consist of cotton and coarse woollen fabrics, straw hats, mats, &c. *Trade.* The principal *exports* are the precious metals, guano, nitrate of soda, wool, cotton, hides, Peruvian bark, sugar, olive oil, and some wine. The *imports* consist of woollen, cotton, and linen goods, machinery, cutlery, earthenware, &c.

	Exports from Peru to Great Britain.	Imports of British Produce into Peru.
1866	£3,022,017	£1,355,960
1867	3,701,362	1,422,112
1868	3,400,026	1,332,363
1869	3,992,472	1,381,695
1870	4,881,075	1,761,173

The staple export to the United Kingdom is guano, the value of which amounts to about £2,000,000 annually. *Money.* The dollar=100 centesimos; average rate of exchange, 3s. 1d. *Weights and Measures.* The ounce =1·014 ounce avoir.; libra=1·014 lb.; quintal=101·44 lb.; arroba of 25 pounds=25·36 lb.; of wines and spirits=6·70 imp. gall.; gallon=0·74 imp. gall.; vara=0·927 yard; square vara=0·859 square yard.

Persia (*Iran*), a kingdom in central Asia, between the 26th and 39th deg. N. *Lat.*, and the 44th and 62nd deg. E. *Long.* Bounded N. by Russia, the Caspian Sea, and Tartary; E. by Afghanistan and Beloochistan; S. by the Persian Gulf; and W. by Turkey. *Pop.* 4,400,000. *Area* 648,000 square miles. *Provinces.* N. Ghelan, Mazanderan, and Astrabad; W. Azerbaijan, Ardalan or Koordistan, Laristan, and Khoozistan; S. Fars, Laristan, and Kaman.; E. Yezd, Tabas or Tubus, Ghayu, and Birjoon, Toorshiz, Meshed, Damghan, and Semnoon, and the Great Salt Desert. These eastern provinces collectively constitute Khorassan. Central Persia, or Irak-Ajemee comprises the provinces of Khamsah, Kasbin, Teheran, Hamadan, Koom, and Ispahan. *The principal cities are* Teheran (cap.), Ispahan, the former cap., and the largest city in the kingdom, Tabreez, Oohoomecyah, Hamadan, Shuster, Kashan, Reshd, Balfroosh, Astrabad, Meshed, Nishapoor, Yezd, Bushire, Shiraz, Larand, Kerman. *Minerals.* Very little is known of the geology of Persia. The Elbrooz Mountains are supposed to possess a primitive character. Porphyry, coloured with chlorite, and compact feldspar, with green earth, are found in abundance in the torrent beds, with occasional granite and mountain limestone. The turquoise mines 40 miles W. of Nishapoor, are an interesting feature. The mines are opened in beds of porphyritic earth or rock, deeply tinged with iron, through which the turquoise is disseminated in veins, nodules, and irregular masses. Iron is abundant, though but little manufactured. Copper, lead, and antimony are also found, and salt, sulphur, and naphtha, are produced in great quantities. Excellent coal is found in the Elbrooz, and also valuable varieties of marble. *Products of agriculture* are wheat, barley, and other grains, the wheat being as fine as any in the world. The vine flourishes in several provinces, and the grapes and the wine of Shiraz are well known. The provinces on the Caspian include sugar, and silk among their chief staples, and they produce the mulberry in great abundance. The great demand which arose for cotton during the American war encouraged the growth of that article in the province of Fars; since 1862–63 the exportation of cotton from Persia has increased fivefold. On the other hand the state of the cotton trade at Astrabad does not appear to have been satisfactory. The Persian and Russian merchants who were in the habit of purchasing large quantities from Mazanderan, Astrabad, Semnoor, Damghan, Sharhood, and

Khorasan, are ceasing to invest large sums in cotton. *Silk*, the, produced in Persia is the principal resource of the country for the maintenance of its commerce with Europe, and it might be worth £1,100,000 per annum, but for the last few years there has been a heavy deficiency in the product, which seriously affected the whole trade of the country. *Trade*, the external, is estimated at not more than £4,000,000 sterling, of which £2,500,000 may be taken as the value of the imports, and £1,500,000 as that of the exports. The *importations* from Europe (not including Persia): cotton manufactures of Manchester and Glasgow, twist, steel, tin, hardware, china, woollen goods, tea, watches, paper, &c The *exportations* consist of raw cotton and silk, tobacco, gall-nuts, beeswax, carpets, &c The *contraband trade* carried on from Tabreez with the Russian Caucasian districts in the manufactures of England, and which brings into the country a supply of Russian gold and silver, has very much fallen off during the last few years, in consequence partly of the greater vigilance with which the frontier has been watched, and partly from the increased traffic which has sprung up by the route through Poti, to which line the smuggling trade is probably now transferred. In like manner, since the Poti route has become more frequented, the demand for the plain manufactures of England, which are dyed in Persia for exportation to the Russian provinces, has declined, and a part of the process of conversion from plain white and grey to dyed articles is now carried on at Tiflis. The commerce of Russia with Persia is inconsiderable, comparatively speaking; and it is a matter of surprise that Russia, with the facilities she possesses in water carriage through the European territory to the Caspian and the northern shores of Persia, should enjoy no greater amount of the foreign trade, and that England, notwithstanding her remote situation, and the indirect and expensive mode of conveyance to which her traffic with Persia is exposed, should still possess a commerce in imports about 12 times more valuable than that of Russia; not that it is carried on by Englishmen, but by natives of the country, and by Greeks and other foreigners established on the spot. The reason of the superior value of English over Russian commerce is the greater cheapness and better adaptation to the general wants of the people of the commodities brought from England. The bulky iron produce of Russia cannot be transported far inland, and her manufactures have not attained to an excellence combined with cheapness which would give them a chance at present in a competition with those of other European countries, or ensure them an extensive demand in the markets of Central Asia. The articles of Russian manufacture which reach Persia are usually of a rough and inferior description. The currency of Persia is in a deplorable state. There is hardly a gold toman in the country that is not clipped and short of weight, and fraud is extensively practised in the minting of the silver coin; so much so, that when specimens were assayed in England, it was found impossible to fix a par of exchange with this country. When merchants are obliged to make remittances to Europe they have recourse to Russian currency; but this is rendered scarce by the directors of the Persian mint, who collect Russian silver roubles, and convert them into Persian kerans and panabats, which are issued with the same amount of alloy as is contained in the Russian roubles; though, according to the standard, the alloy in Persian coins, whether gold or silver, should not exceed 3 per cent. At Sheeraz the mint authorities purchase silver rupees at 223 kerans per 100. These are melted down and recoined into 240 kerans, by which process the mint defrauds the public of about 8 per cent. on the value of the silver currency. Rich in minerals, capable of producing the finest grain, cotton, silk, and wool to any extent, possessing immense forests, whence excellent timber may be obtained, it is to be regretted that the little needed to render Persia a flourishing country should be withheld. Baron de Reuter may turn the concessions obtained from the Shah to immense account; but bearing in mind that eastern potentates are fickle, and that English capitalists may not care to back up the Baron with their money, since the Foreign Office has declined to guarantee anything in connection with the concessions, it is hardly safe to depend upon Persia being raised in the commercial scale by no other means than what is at Reuter's command. What is wanted is a better system of administration, under which her peasantry might feel less insecurity, and cart roads whereby a cheap and easy outlet would be obtained for her productions to the Caspian Sea and the Persian Gulf. But so long as these are wanting, the resources of this country must necessarily remain undeveloped. *Money*. The keran=1000 dinas, or 20 shahis=11⅛*d.*; toman=10 keran=9*s.* 3¼*d.* The common integer of account is the toman, an imaginary money, divided into 8 reals, 10 sahib karauns, 20 panabats, 50 abassis, 100 manrodis, 200 shahies, or 10,000 altins. *Weights and Measures*. The batman=40 sihrs or 640 miscals=13½ lb avoir.; collothun=3½ cepichas or 6¼ chenicas=1·809 imp. gall.; artats=8 collothun=1·809 imp. bush; zer=16 gerchs=38 inches; fersakle or parasang=4½ inch.

Persian, the name of a thin, inferior kind of silken stuff, which is principally employed in lining the garments of females.

Personal, being joined with the substantives, things, goods, or chattels, as things personal, goods personal, chattels personal, signifies any movable thing belonging to a man, be it quick or dead.

Petroleum, a bitumous kind of mineral oil, principally found in coal districts. It is very abundantly diffused, and has been found in large quantities in America. The districts in which petroleum wells are situated consist of a sandy loam resting upon alternate strata of sandstone and indurated clay; under these is a layer of pale blue argillaceous schist of considerable thickness, impregnated with petroleum, and resting upon coal. The oil flows into the well when it is sunk a few yards into the schist, and when it begins to fail the well is deepened.

PEWTER [Ger. *Zinn*, *Zinngeisserzinn*, Du. and Da. *Tin*, Sw. *Tenn*, Fr. *Etain*, It. *Stagno*, *Peltro*, Sp. *Estano*, *Peltre*, Port. *Estanho*, Rus. *Olowo*, Pol. *Cyna*], a factitious metal used in making, plates, dishes, and other domestic utensils. It is a compound metal, the basis of which is tin. The best sort consists of tin alloyed with about a twentieth or less of copper, or other metallic bodies, as the experience of the workmen has shown to be the most conducive to the improvement of its hardness and colour, such as lead, zinc, bismuth, and antimony. There are three sorts of pewter, distinguished by the names of plate, trifle, and ley-pewter. The first was formerly much used for plates and dishes; of the second are made the pints, quarts, and other measures of beer; and of the ley-pewter wine measures and large vessels.

PHILIPPINE ISLANDS, a group of the Indian or Eastern Archipelago, belonging chiefly to Spain, bounded N. and E. by the Pacific, S. by the seas of Celebes and Sooloo, and W. by the China Sea; extending from *Lat.* 5° 32′ to 19° 38′ N., and from *Long.* 117° 21′ to 126° 8′ E. *Area* of the whole, about 200‘000 square miles. *Pop.* about 5,000,000. The total number of islands is about 1,200, but the greater part are of little importance, being mere rocks. *Minerals.* Gold is found in most of the larger islands, together with iron, copper, and lead, and mercury in Luzon. Sulphur is abundant, and coal has been worked to some extent on a small island off the E. coast of Luzon, and found in two places at the S. end of Mindanas. *Agriculture.* The soil is remarkably fertile, and the principal productions of the group are rice, maize, cotton, sugar-cane, coffee, cloves, pepper, indigo, hemp, tobacco, cocao, bananas, cocoa-nuts, and various other kinds of palms. In no part of the group are coffee plantations to be found on any great scale, directed by Europeans. The cultivation of the tree appears to be confined almost entirely to the natives who dwell in the plain districts and in low hill ranges, and who plant but a few trees, in patches near their houses. The little that is grown is of excellent quality, and there is no doubt, were plantations established on some of the high lands, under proper guidance, that coffee would soon form an important item in the commerce of these islands. *Tobacco.* There are four kinds in use in the Philippines, viz., the Hinolivo, the Minustasa, the Pampesso, and the Corazon. The three first are for the most part used in Nueva Ecija, and the latter in Cagayan. That of Cagayan produces larger leaves than any of the other sorts, and it is considered of a far finer quality. The seed is sown in the month of November, in small nurseries. About six weeks after sowing the young plants are removed to the fields, the distance left between them being about three feet. They are then covered up for a few days, to prevent their being burnt up by the heat of the sun. About two months and a half after this the upper shoots are plucked off, so as to prevent them from running too much to stem. Soon after this the first crop of leaves is collected; all the new shoots are then removed, except the two lower ones, from each of which are gathered four or five leaves. This forms the second crop. A third crop is sometimes obtained, but the leaves are, generally speaking, of a poor quality. The plant then ceases bearing. Twenty-two leaves may be considered as the average yield of a healthy plant. *Manilla*, the cap. and commercial emporium of the group, is in *Lat.* 14° 35′ N., and *Long.* 122° 2′ E., in the E. corner of an extensive bay on the S.W. coast of Luzon. *Pop.* 103,400. It is the seat of extensive commerce, and exports sugar, hemp, leaf tobacco and cigars, indigo, coffee, rice, &c., to the extent of £2,296,000 annually; and imports cotton, silk, woollen goods, jewellery, &c., to the extent of about £2,600,000. *Shipping.* The tonnage of British ships entered annually is about 32,922. *Accounts* are kept in dollars, and the measures and weights are partly Spanish and partly Chinese. *Cebu* (the island of), distant some forty-eight hours' steam from Manilla, lies north of the equator, between the 9th and 11th degrees of latitude. *Area* 1,500 English square miles. *Pop.* 34,000. The productions are much the same as those of the adjoining islands.

PICUL, a Chinese weight=133⅓ lb.

PIECE sometimes denotes a whole, and sometimes only a part of the whole. *Piece*, in a pecuniary sense, is sometimes the same thing with species, and sometimes it denotes such money as has no other particular name.

PIG (*of lead*), the eighth part of a fodder, amounting to about 250 lb. weight.

PILE, among mercers, is used to signify the nap or surface of velvet; and when this, by accident or otherwise, is removed or shorn off, the velvet is said to be *piled*.

PINCHBECK [Ger. *Tomback*, Du. *Tombak*, Da. *Tambak*, *Tombak*, Sw. *Tomback*, Fr. *Tambac*, *Similor*, It. *Tombacco*, Sp. *Tambac*, *Tumbaga*, Port. *Tombaque*]. By melting yellow copper in various proportions with red copper, some ductile alloys result, the colours of which approach more or less to that of gold. Among these is pinchbeck, which approaches very near to the colour of gold.

PINS [Ger. *Stecknädln*, *Knöpfnadeln*, Du. *Spelden*, Da *Knappenaale*, Sw. *Knappnalar*, Fr. *Epingles*, It. *Spilli*, *Spiletti*, Sp. *Alfileres*, Port. *Alfinetes*, Rus. *Bulawki*, Pol. *Szpilki*]. The pins most esteemed in commerce are those of England; those of Bordeaux are next; and then those made in some other parts of France. The London pointing and whitening are in the highest repute, because our pinmakers in pointing use two steel mills, the first of which forms the point, and the latter takes off all irregularities, and renders it smooth, and, as it were, polished; and in whitening they use block-tin finely granulated, whereas in other places they mix their tin with lead and quicksilver, which not only whitens worse than the former, but is a dangerous implement, since the least puncture made with it is not so readily cured, and, if not attended to, may turn to a mortification. Pins are distinguished by numbers; the smaller are called from No. 3, 4, 5, to 14, whence they go by *twos*, viz., No. 16, 18, 20, which latter is the largest size. Besides the white pins there are black ones, prepared with a sort of Japan varnish, for the use of mourning.

PIPE, a wine measure, usually containing from 110 to 140 gallons. Two pipes, or 252 gallons, make a tun. The pipe of Port contains 138 gallons; of Sherry, 130; of Lisbon and Bucellas, 140; of Madeira, 110; and of Vidonia, 120. The pipe of Port, it is to be observed, is seldom accurately 138 gallons, and it is customary to charge what the vessel actually contains.

PISTACHIA, PISTACIA, or PISTACHIO NUTS [Ger. *Pistaschen*, Du. *Pistasjes*, Da. *Pistacier*, *Pistaser*, Sw. *Pistacier*, Fr. *Pistaches*, It. *Pistacchi*, *Fastucchi*, Sp. *Alfocigos*, Port. *Pistacias*, *Fisticos*, Pol. *Pistacye*, Lat. *Pistaciæ*] are the fruit of the *pistachia terebinthus*. This tree grows naturally in Arabia, Persia, and Syria; also in Sicily, whence the nuts are annually brought to us. There are likewise some species of this tree cultivated in the East Indies, and in several parts of Portugal, Spain, Italy and France. The fruit loses much of its beauty by drying, but improves perhaps in flavour. The tree, when laden with clusters of the ripe, smooth nuts, of a beautiful pale bluish colour, makes a fine appearance. It seldom exceeds thirty feet in height, and is often not more than twenty; the trunk, which is proportionally short, is about three, or three feet and a half in circumference. Some of these trees have male, and others female flowers, and some both male and female on the same tree. The female flowers come out in clusters on the sides of the branches: they have no petals, but a large oval germen, supporting three reflexed styles, and are succeeded by oval nuts. These nuts are moderately large, containing a kernel of a pale greenish colour, covered with an outer husk of different hues, from almost white to red. They have a pleasant, sweet, and unctuous taste, resembling that of almonds, and abound with a sweet, well-tasted oil, which they yield in great abundance, on being pressed after bruising them.

PITCH [Ger. *Pech*, Du. *Pek*, Da. *Beg*, Sw. *Beck*, Fr. *Poix*, *Brai*, It. *Pece*, Sp. *Pez*, Port. *Brea*, Rus. *Smola gustaja*, Pol. *Smola*, Lat. *Pix*]. Tar boiled down to dryness is the common black pitch: this part of the process is commonly performed in a still, in order to save an essential oil, which arises in the boiling, and which is called, from the name of the tree which tar is principally prepared from, *oleum pini*, and *oleum tædæ*. This oil is greatly valued by painters, varnishers, &c., on account of its drying quality.

PRINCE EDWARD'S ISLAND, an island and colony of British America, on the S. side of the Gulf of St. Lawrence, between *Lat.* 45° 58′ and 47° 7′ N., *Long.* 62° to 64° 27′ W. *Area*, about 2,134 square miles. *Pop.* 71,502. *Divisions.* Prince's, King's, and Queen's counties. *Caps.* Princetown, Georgetown, and Charlottetown. Formerly the island was covered by extensive forests, but they have been nearly all removed, and there is now only sufficient timber for industrial purposes. All kinds of grain, fruit, and vegetables, common to temperate regions succeed remarkably well, and bear abundant crops. The manufactures are inconsiderable, and the trade consists of the exchange of agricultural produce, timber, and some fish, for American and British fabrics.

PLANKS [Ger. and Du. *Planken*, Da. *Planker*, Sw. *Plakor*, Fr. *Planches*, *Bordages*, It. *Tavole*, Sp. *Tablas*, Port. *Pranchas*, *Taboas*, Rus. *Tolstüe olosku*], thick strong boards, cut from various kinds of wood, especially oak, pine, and fir. Planks are usually of the thickness of from one inch to four. They are imported in large quantities from the northern parts of Europe, particularly from the ports of Dantzic, Archangel, Petersburg, Narva, Revel, Riga, and Memel, as well as from several parts of North America.

PLATTING, the slips of cane, straw, or chip for making hats, woven or platted into pieces.

PLOUGH, in agriculture, a well known machine for the breaking up of ground, that consists of a train and two large irons, namely, the coulter and the share; the one pointed, the other edged. The iron parts of the ploughs are manufactured principally at Sheffield, Birmingham, Wolverhampton, Dudley, &c.: the wooden frames are made in almost every considerable town and village throughout Great Britain.

PLUMS, or DRIED PLUMS [Ger. *Getrocknete Pflaumen oder Zwetschen*, Du. *Droogo Pruimon*, Da. *Törres Blommer*, Sw. *Torra Plommen*, *Sviskon*, Fr. *Pruneaux*, *Prunes sèches*, It. *Prugne ò Susine secche*, Sp. *Ciruelas pasas*. Port. *Passa de ameixas*, Rus. *Tschernosliw*, Pol. *Sliwki suche*], more usually called prunes, are the fruit of the plum-tree, dried in the sunshine or in an oven. The best kind of prunes known in commerce are the large black ones brought from Bordeaux.

PLUSH, a kind of stuff having a sort of velvet nap, or shag, on one side, composed regularly of a single woollen thread, and a double warp, the one wool, or two threads twisted, the other goats' or camels'-hair; though there are some plushes entirely of worsted, and others composed wholly of hair.

POCKET, in the wool trade, a word used to denote a larger sort of bag, in which wool is packed up to be sent from one part of the kingdom to another. The packet usually contains twenty-five hundred-weight of wool. The pocket of *hops* is a small bag usually containing the best hops.

POCKET-BOOKS [Ger. *Brieftaschen*, Du. *Brieftassen*, Da. *Breftasker*, Sw *Brefvaskor*, Fr. *Porte-feuilles*, It. *Cartelle*, Sp. *Carteras*, Port. *Carteiras*] are small cases, usually so compactly formed that they may be carried in the pocket; whence their designation. Pocket-books are sometimes, however, equal in size to the portfolios of painters, &c.; being intended for the use of commercial travellers, and others who have occasion to carry about with them patterns of small volume or considerable value. Pocket-books are usually made of morocco leather of various colours, ornamented occasionally with silver or plated mountings, locks, and clasps, but some are perfectly plain, and secured only by means of a strap. The best pocket-books are made at London, where they are finished in the most elegant style, and whence there is a considerable trade in the article to different parts of the world.

POINT, in manufactures, is a general term used for all kinds of lace wrought with the needle; such are the *point de Venice*, the *point de France*, *point de Genoa*, &c., which are distinguished by the particular economy and arrangement of their points.

POLICY OF ASSURANCE, the deed or instrument by which a contract of assurance is effected. The premium or consideration paid for the risk or hazard assured against must be inserted in the policy, and likewise the day, month, and year on which the policy is executed, and it must be duly stamped. Policies for assurance against the risks of sea are distinguished into valued and open policies; in the former the goods or property assured are valued at prime cost at the time of effecting the policy insurance; in the latter, the value is not mentioned; but is left to be afterwards declared, or to be proved in the event of a claim. In a valued policy, the proper effect of the valuation is the affecting the amount of the prime cost, in the same manner as if the parties had admitted it at trial; but for every other purpose it must be taken that the value was fixed in such a manner as that the insured meant to have an indemnity, and no more.

POPLAR [Ger. *Pappel*, *Pappelbaum*, Du. *Popelier*, Da. *Popel*, Sw. *Poppeltråd*, Fr. *Peuplier*, It. *Pioppo*, Sp. *Alamo*, Port. *Alamo*, *Alemo*, Rus. *Topol*, Pol. *Topola*, Lat. *Populus*]. The height and straightness of this tree render it useful for many of the purposes of carpentry. The wood of the poplar is good for laying floors, and on account of its whiteness, it is by many preferred to oak; yet, on account of its soft contexture, being very subject to take the impression of nails, &c., it is less proper on this account than the harder woods.

PORPHYRY [Ger. *Porphyr*, Du. *Porfiersteen*, Da. and Sw. *Porphyr*, Fr. *Porphyre*, It., Sp., and Port. *Porfido*, Rus. and Pol. *Porfir*, Lat. *Porphyrius lapis*] includes those stones which contain either felt-spar, schoerl, quartz, or mica, with other species of crystalized stone, on a siliceous or calcareous ground. It is found of several different colours, as green, deep red, purple, black, dark brown, and grey. When the ground is of jasper, the porphyry is commonly very hard; the red generally contains felt-spar, in small white dots or specks, and frequently together with these black spots of schoerl. The green is often magnetic, and is either a jasper or schoerl, with spots of quartz. Sometimes a phorphyry of one colour contains a fragment of another of a different colour. Those that have chert for their ground are fusible *per se*. The calcareous porphyry consists of quartz, felt-spar, and mica, in separate grains, united by a calcareous cement; and, lastly, the micaceous ground in which red felt-spar and greenish soap-rock are inserted. The Egyptian porphyry is a most elegant mass, of an extremely firm and compact structure, remarkably ponderous, and of a fine strong purple, variegated more or less with pale red and white. In Upper Egypt and Arabia Petræa, the hard, pale, red porphyry is also found in surprising quantities: it is variegated with black, white, and green; takes a high polish, and emulates all the qualities of the Oriental porphyry. The hard, red lead coloured porphyry, variegated with black, white, and green, is a most beautiful and valuable substance. It possesses the hardness and all the other characters of the Oriental porphyry, and even greatly excels it in brightness, beauty, and variety of hues. It is found in great quantities in the island of Minorca, and is well worth importing, being vastly superior to all the Italian marbles

PORT, the name of a red wine, so called from Oporto or 'Porto, a city and sea-port of Portugal, whence immense quantities of the article are annually exported, almost exclusively to England. The vine which yields the port wine was originally brought from Burgundy, but the transplantation has had so wonderful an effect upon it that scarcely anything can be more distinct from the wines of Burgundy than that of Oporto. The latter is usually of a remarkably strong body, of a rough and agreeably acid flavour, and its effects are rather stupefying than exhilarating. Prior to its being exported it is always well brandied; but it is to be observed that the wine shipped to Ireland is never so much brandied as what is brought into this country. The wine consumers of the sister-kingdom have long been used to the luxury of claret, and this will serve to account for the preference they give to light ports, which come nearest to the French wine just mentioned. The merchants of Southampton have been in the habit of importing peculiarly light port wines, whence the English dealers denominate this description of the article, *Southampton port.*

Portmanteau, a small trunk, generally of a roundish form, and either formed entirely of leather, or composed of a wooden chest, covered with leather, or hide in the hair.

Portugal, a kingdom of Europe, between *Lat.* 37° and 42° N. and *Long.* 6° and 10' W., forming part of the Spanish peninsula. Bounded N. and E. by Spain, and S. and W. by the Atlantic. *Area and Pop.* The Continent (Portugal), 34,491 English square miles; population, 3,987,861. The Azores, 996 sq. miles; pop. 249,941. Madeira, 314 sq. miles; pop. 112,164. *Provinces.* Minho, Tras-os-Montes, Beira, Estremadura, Alemtejo, Algarve. *Principal Towns.* Lisbon and suburbs, pop. 224,063; Oporto, 89,194; Braga, 19,514; Coimbre, 18,147; Setubal, 13,134; Loule, 12,156; Evora, 11,965; Elvas, 11,088; Tavira, 10,903. *Colonies* are the Azores, Madeira, and Porto Santo, the islands of Cape Verd, Principe, St. Thomas, and Auno Bom, on the African coast; some portions of Guinea; Angola and Benguela; Mozambique and its territory; Goa, Damao and Dio, in India; the islands of Timor and Solor; and the city of Macao, in China. *Minerals* Although in this respect the kingdom is rich, mining operations, till the last few years, have been greatly neglected. There are four mineral divisions or districts, over which an engineer appointed by Government exercises inspection. In 1853 there were but two mines in existence, viz., that of anthracite, of San Pedro de Cova, near Oporto, and the lead mine of Bracal, in the district of Aveiro; in 1862 the mines were 24; in 1866 the number in operation had increased to 56. The are now 256 mines, producing copper, lead, tin, antimony, manganese, iron, anthracite, and lignite. In 1866 the mineral produce from the mine of St. Domingos was nearly 167,000 tons of iron pyrites, with a mixture of copper, 1,600 tons of copper, 1,200 tons of lead, 1,000 tons of manganese, 1,000 tons of sulphur and antimony. The approximate value of these minerals equalled £520,000. *Coal.* The existence of coal in Portugal is of rare occurrence and limited in quantity. There are only three places where the presence of coal is well developed, viz., at San Pedro de Cova, Bussaco, and Moinho da Ordens. *Petroleum.* The bituminous sandstone has a great development in the district of Teiria; rich layers, almost fluid, appear nearly on the surface of the earth, extending from the River Lig to San Martinho do Porto. *Iron* is abundant in all the provinces of the kingdom. The mountains Serra dos Monges, in the commune of Monte Moro Novo, district of Evero, is one of the most important sites, from its position and productiveness; the facilities for extracting the ore on a large scale are great, and the short distance from the railway renders its exportation easy from Barreiro, the harbour opposite to Lisbon. This mineral also exists in considerable quantity in the province of Alemtejo, near Villa Boim, about four miles from Eloas, and also at Campo Maior, near the Spanish Estremadura. In Alemtejo carbonate of iron is frequently to be met with between Santiago do Cacem and Odemira. *Copper.* In Alemtejo, in the district Evora, there are seven copper mines; in the province of Beira three copper mines exist. The mine of Palbal, from 1860 to 1866, produced 8,539 tons of copper. The mineral is washed, and shipped from Aveiro to England. The mineral produce of San Domingos is iron pyrites and copper, containing 3·5 per cent. of copper and 4·9 to 5 sulphur. The Romans had worked this mine; the quantity of scoria existing shows the immense amount of ore which they had extracted. The mine of San Domingos has surpassed in productiveness all the mines of the Spanish province of Huelva, and has become the most important of its kind—a consequence arising from the facility of carriage. At Pomarao, on the River Guadiana, a port has been constructed, with solid quays along its banks, whence ships receive their cargoes. The first ship was laden in 1859, since which time 700,000 metrical tons of iron pyrites have been exported to England. *Lead, silver, and zinc mines.* The mine of Varzea de Trovaens ranks first for its productiveness in both silver and lead. It is situated in the commune of St. Joao de Pasquera, about seven miles south of the Douro. Bracal has two veins, which are being worked. Malhada has three veins, which vary in thickness, and sometimes consist of quite pure ore. *Agriculture* is in a very backward state, the implements used being rude and clumsy, and the whole system of tillage imperfect and unthrifty. The great staples of the country are wheat, wine, and olive oil. The common bread of the people is made of Indian meal, the soil and climate being both well adapted for the production of maize. Hemp and flax are extensively grown, and beans and other garden vegetables are raised in abundance. The average annual agricultural production of the country amounts in value to about £8,000,000 sterling; the grain being valued at £2,000,000, the wine at £2,400,000, and the wool at £1,400,000. *Wines.* The wines of Portugal have long been celebrated, particularly the red variety called port, from Oporto, the place of shipment. This wine is produced on a succession of low hills about 50 miles above the town. It is usually divided into two sorts—the *vino do rama*, an inferior kind, for home consumption and distillation into brandy; and the *vino do feitoria*, or factory wine, for exportation. *Industries.* The manufactures of Portugal are not extensive. Woollen cloth is made at Lisbon, Covilha, Portalegru, and at Zeitao; cotton goods at Lisbon, Oporto, and Thomaz; silk in Algrave; steam-engines, iron and tin work, firearms, porcelain, gold and silver work, pottery, candles, &c., at Lisbon, where also there are tanneries, distilleries, and sugar refineries. There are in Portugal, altogether, 52 paper-mills, giving employment to 561 men, 703 women, and 177 children—in all, 1,441 persons; but in only three of these mills is printing paper made, and its insufficient production, high price, and bad quality have been constantly complained of, while foreign paper has hitherto been practically excluded from the market by high duties. *Exports to Great Britain*, in 1867, were valued at £2,324,541; in 1868, at £2,253,095; in 1869, at £2,664,257. *Imports of British Home Produce*, in 1867, £1,823,382; in 1868, £1,554,649; in 1869, £1,638,313. The imports embraced cotton and woollen fabrics, and iron, wrought and unwrought. *Money.* The mil reis; average rate of exchange, 54*d.* *Weights and Measures.* The libra=1.012 lb. avoir.; almunde of Lisbon=3·7 imp. gall.; of Oporto=5·6 imp. gall.; alquiebre=2.98 imp. gall; moio=2.79 imp. quarters. *Ports.* Lisbon is on the right bank of the Tagus, lat. 38° 42′ N., long. 9° 8′ W. *Shipping.* In 1867 731 British vessels, 367,756 cubic metres, entered this port against 944 foreign vessels, 288,362 cubic metres. *Oporto* lies two miles from the mouth of the Douro, lat. 41° 8′ N., long. 8° 27′ W., 170 N. of Lisbon. This is the outlet of the North, and most industrious provinces.

Post Entry. When goods are weighed or measured, and the merchant has got an account thereof at the custom-house, and finds his entry, already made, too small, he must make a *post* or additional *entry* for the surplusage in the same manner as the first was done. As a merchant is always in time, prior to the clearing of the vessel, to make his post, he should take care not to over enter, to avoid as well the advance, as the trouble of getting back the overplus.

Posting, in book-keeping, is the mode of transferring articles of different descriptions from the inferior to the superior books of accounts, and there arranging them under their proper heads. [*See* Book-Keeping.]

Post-Paper [Ger. and Du. *Postpapier*, Da. *Postpapir*, Sw. *Postpapper*, Fr. *Papier fin à lettres*, It. *Carta fina per lettere*, Sp. and Port. *Papel fino*, Rus. *Potschtowaja bumaga*, Pol. *Pocztowy papier*] is a name given to the fine paper used in letter-writing. It has obtained this appellation from letters being usually forwarded by the *post*.

Potatoes [Ger. *Kartoffeln*, Du. *Aardappelen*, Da. *Patater*, *Jordæbler*, Sw. *Potatos*, *Jordparon*, Fr. *Pommes de terre*, It. *Patate*, *Pomi di terra*, *Tartufoli*, Sp. *Patatas manchegas*, *Patatos inglesas*, *Comotes*, Port. *Batatas de terra*, *Pomos de terra*, Rus. *Jabloki*, *semlenüe*, *Kartoflu*, Lat. *Tubera virginiana esculenta*], it is generally supposed, came originally from North America. They were first introduced into Ireland, we are told, in the year 1565, and thence were brought to England. It was forty years after their introduction, however, before they were much cultivated about London; and prior to 1663 they did not come into general use. The utility of potatoes, as food for man and cattle, is well established. The peasantry of Ireland have scarcely any nutriment beside what this plant affords them, yet there are not more hardy, robust, or hale people in the dominions of her Majesty.

Pots [Ger. *Töpfe*, Du. *Potten*, Da. *Potter*, Sw. *Pottor*, Fr. *Pots*, It. *Stoviglie*, Sp. *Ollas*, Port. *Panellas*, Rus. *Gorschoku*, Pol. *Garnki*], well known vessels usually employed for culinary purposes, and made, for the most part, of iron, copper, or brass. Articles of this kind are principally manufactured at Birmingham, Sheffield, Wolverhampton, &c.

Pot-Ash [Ger. *Pottasche*, Du. *Potas*, Da. *Potaske*, Sw. *Potaska*, Fr. *Potasse*, It. *Potassa*, Sp. and Port. *Potaeso*, Rus. *Potasch*, Pol. *Potasz*, Lat. *Cineres clavellati*], an impure fixed alkaline salt, of the colour of iron-stone or paler. It is obtained by burning birch or alder by a slow fire to ashes, and making them into a paste with water. This paste is plastered over a row of green pine and fir logs. Above that is laid transversely another row of the same, and that likewise is plastered over. In this way they continue building and plastering, till the pile be of a considerable height. This pile is set on fire, and whenever the ashes begin to run, it is overturned, and the melted ashes are beaten with flexible sticks, so that they incrust the logs of wood, and become as hard as stone. This seems to be the method of making potash in Sweden, Poland, &c. The Russian potash is stronger, and, according to Sir Peter Warren, the best woods for making it are oak, ash, poplar, elm, hazle, and beech.

Potter's Clay [Ger. *Töpfererde*, Du. *Pottaarde*, Da. *Potteleer*, Sw. *Krukomakare-lera*, Fr. *Terre à potier*, It. *Terra de stoviglie*, Sp. *Tierra da alfareros*, Port. *Barro*, Rus. *Barro*, Prus. *Glina*, Pol. *Glina zdunska*], a denomination applied to the different species of clay used in the manufacture of pottery. Staffordshire and some other parts of England are wonderfully rich in clay of this description.

Pounce, gum-sanderach, pounded and sifted very fine, to rub on paper, in order to preserve it from sinking, and to make it more fit for writing upon.

Pound, a certain weight used as a standard to determine the gravity and quantity of bodies. In England we have two different pounds, the pound troy, and the pound avoirdupois. The pound troy consists of twelve ounces, each ounce of twenty pennyweights, and each pennyweight of twenty-four grains. This pound is used in the weighing of silver, gold, precious stones, &c.

Powder-Blue, or **Starch-Blue** [Ger. *Blaussel*, Du. *Blaauwsel*, *Blaauw*, Da. *Blaafarve*, *Blau*, *Blausel*, Sw. *Blausell*, *Blastarkelse*, Fr. *Bleu d'empois*, It. *Turchino d'amido*, Sp. *Polvos azulos*, Port. *Azul*, *Azul de esmalte*, Rus. *Skorbilo*, Pol. *Lazur*], is a composition of starch, some bluish pigment, wax, and occasionally a little alum. The whole of these substances are boiled together, and when dry the composition is reduced to an impalpable powder. The use of this article is to stiffen linen, and give it, at the same time, that azure cast which makes it appear of a softened white hue.

Practice, in arithmetic, has its name from its general use in business, as it is a rule that teaches the best and most compendious methods of solving almost every question that occurs in mercantile transactions, and is to be preferred to Compound Multiplication and to the Rule of Three, whenever the first term is unity. Practice may be defined a method of finding the value of any quantity of goods from the price of an integer being given.

Precious Metals. The imports and exports of gold and silver bullion and specie registered at the Custom-houses of the United Kingdom in 1871 show an extensive movement of the precious metals. The *imports* of gold into the United Kingdom were of the value of £21,613,005, and of silver £16,527,322—making a total of £38,140,327. The exports of gold were of the value of £20,698,275, of silver £13,062,396—making a total of £33,760,671. The imports of gold include £6,898,826 from Australia, £6,492,595 from the United States, and £1,172,442 from South America; and the imports of silver include £5,673,958 from the United States, £3,068,216 from China, and £3,403,445 from South America. The exports of gold include £3,238,294 to South America (two-thirds of it to Brazil), £1,405,641 to Egypt, and £1,142,845 to South Africa; and of silver, £3,041,186 to Egypt, being chiefly bullion for India. In Europe, our Custom-house returns show, in 1871, an export of gold from this country to Germany to the amount of no less than £8,487,948, and of silver £3,092,222, and an import thence into the United Kingdom of £922,381 gold and £1,184,386 silver. Our imports of gold from France advanced to £3,702,203, our import thence of silver declining to £1,089,247; our export of gold to France declined to £1,569,171, that of silver amounting to £1,239,904. The exports of gold to Portugal were large, and both of gold and silver to Belgium, and the exports of silver to Holland and to Spain. The excess of the total imports of gold and silver into the United Kingdom over the exports was £4,123,463 in 1869, £10,535,978 in 1870, and £4,379,656 in 1871.

Precious Stones [Ger. *Edelsteine*, Du. *Edele steenen*, Da. *Ædelstene*, Sw. *Adlestenar*, Fr. *Pierres precieuses*, It. *Pietre preziose*, Sp. *Liedras preciosas*, Port. *Ledras preciosas*, Rus. *Dorogia Kamenja*, Pol. *Drogie Kamienie*, Lat. *Lapides pretiosi*, *Gemmæ*]. This appellation is bestowed upon the gems dug from mines, and found either in masses or small detached pieces, in various parts of the world. Asia and South America are the parts of the world supposed to be most abundant in precious stones.

Premium denotes that sum of money or percentage which is given to an underwriter for insuring the safety of a ship or merchandize. The premium is always expressed to have been received at the time of underwriting: "We, the assurers, confessing ourselves paid the consideration due unto us for this assurance by the assured." This being subscribed by the underwriter, it is proper to inquire whether, if the premium were not actually paid at the time, he could afterwards maintain an action for it against the assured, who might then produce his subscription as evidence against himself. Questions upon policies of insurance stand most broadly upon the usage of the place where the policy is effected, and this question would no doubt be determined by usage. By the custom of London, the underwriter credits the broker, and not the assured, for the premium.

Price Current, a list or enumeration of various articles of merchandise, with their prices, the customs and excise payable thereon, and the drawbacks allowed upon particular sorts of goods. Lists of this description are published periodically, generally once or twice a week, in most of the great commercial cities and towns of Europe.

Principal, the capital sum due or lent in opposition to interest. Principal also denotes the first fund put by partners into a common stock, by which it is distinguished from the calls or accessions afterwards required.

Pricking, in the sea language, is to make a point on the plan or chart, nearly about where the ship then is, or is to be at such a time, in order to find the course proper to be steered.

Primage is a certain allowance paid by the shipper or consignee of goods to the mariners and master of a vessel for loading the same.

Probat, or **Probate**, the proof of wills and testaments of persons deceased, in the spiritual court, either by the oath of the executor, or with witnesses.

Procuration. Where a merchant resident abroad appoints his agent or correspondent, or where a merchant, during his absence from the seat of his business, empowers his clerk to accept or indorse bills on his account, this is termed acceptance or indorsement by procuration, and the principal will be bound by such act.

Produce, in mercantile affairs, is a term applied to the indigenous merchantable commodities of any territory. Thus we call sugar, coffee, cotton, and the like, "West India *produce*;" hemp, flax, and wood of different kinds, "Russian *produce*," &c., &c.

Profit, is the advantage or emolument which a trader acquires by trafficking in goods of any kind. Some trades afford better profits than others, and sometimes local circumstances and casualties of various descriptions either improve or depress the profits of particular branches of industry and commerce. Five-and-twenty per cent. is considered the general standard of profit among manufacturers.

Profit and Loss, in arithmetic, is that rule which discovers what is gained or lost in the purchase and sale of goods, and it teaches persons how to fix the price of their goods so as to gain a certain per-centage.

PROHIBITED GOODS are such goods as are not allowed to be either exported or imported.

PRUNELLOES, or PRUNES OF BRIGNOLIA [Ger. *Prunellen*, Du. *Pruimellen*, *Prunellen*, Da. and Sw. *Bruneller*, Fr. *Prunes de Brignoles*, *ou Brignolles*, It. *Susine di Brignola*, Sp. *Ciruelas de Briñola*, Port. *Ameixas de Brinhola*, Rus. *Smokwa*, Pol. *Brunele*, *Prunele*, Lat. *Pruneolæ*, *Pruna Brignolensia*], a sort of French prunes, of which large quantities are annually gathered in Provence, especially in the neighbourhood of Brignolles, whence their name. A very great trade is carried on in the article by the merchants of Provence. This fruit is very different from the common French prunes, though somewhat larger.

PRUSSIAN BLUE [Ger. *Berlinerblau*, Du. *Berlyns blaauw*, Da. *Berliner blaat*, Sw. *Berliner blålt*, Fr. *Bleu de Prusse*, It. *Azurro Prussiano ò di Berlino*, Sp. *Azul de Prussia*, Port. *Azul de Allemanha ô de Prussia*, Rus. *Lasor Berlinskaja*, Lat. *Cæruleum Berolinense*]. Iron is the basis of this fine blue pigment, called, from the place where it was first discovered, Berlin or Prussian blue. This colour was accidentally discovered about the beginning of the last century, by a chemist of Berlin, who, having successively thrown upon the ground several liquors from his laboratory, was much surprised to see it suddenly stained with a beautiful blue colour. Recollecting what liquors he had thrown out, and observing the same effects from a similar mixture, he prepared the blue for the use of painters, who found it might be substituted for ultra-marine, and have used it accordingly ever since.

PUBLISHING is the business of producing books for sale through booksellers, or middlemen, to the public. Formerly no distinction existed between the two businesses. The bookseller was publisher and wholesale and retail dealer in one. He bought the author's MS., had it printed and bound, and placed the complete book on his counter for sale. *Book* (Anglo-Saxon *boc*, from *boc*, a beech, because the earliest writings among the Scandinavians were executed on beech boards), the general name for almost every literary composition. As to the origin of books or writings, those of Moses are undoubtedly the most ancient that are extant; but long before Moses' time it is believed there were many books written. Of profane books, the oldest extant are Homer's poems, though Greek writers mention seventy others prior to Homer; as Hermes, Orpheus, Daphne, Horus, Linus, Palamedes, Zoroaster, &c., but of the greater part of these there is no fragment remaining, and of others, the compositions which go under their names are held by the learned to be supposititious. Several sorts of material were used formerly in making books. Plates of lead and copper, the bark of trees, bricks, stone, and wood were the first materials employed, and on these were engraved such things as men were willing to have transmitted to posterity. Josephus speaks of two columns, the one of stone the other of brick, on which the children of Seth wrote their inventions and astronomical discoveries. Mention is made of some pillars preserved in Crete, on which the ceremonies observed by the Corybantes were recorded. Hesiod's works were originally written on tables of lead; the ten commandments were written on stone, and Solon's laws upon wooden planks. Tables of wood, box, and ivory were common among the ancients. When of wood, they were frequently covered with wax, that people might write upon them with more ease, or obliterate what they had written. The leaves of the palm-tree were afterwards used instead of wooden planks, and the finest and thinnest part of the bark of such trees as the lime, the ash, and the maple; hence comes the word *liber*, which signifies the inner bark of the trees: and as these barks were rolled up, in order to remove them with greater ease, these rolls were called *volumen*, a volume, a name afterwards given to the like rolls of paper or parchment. Thus books were first written on stone, as was the decalogue given to Moses; then on the parts of plants, as leaves chiefly of the palm-tree, the rind and barks especially of the *tilia* or phillyrea and the Egyptian papyrus. By degrees wax, then leather, were introduced, especially the skins of goats and sheep, of which at length parchment was prepared. Then lead came into use; also, linen, silk, horn, and lastly paper. The first books were in the form of blocks or tables; but as flexible matter came to be used, it was found more convenient to make books in the form of rolls. These were composed of several sheets fastened to each other, and rolled upon a stick, or *umbilicus*, the whole making a kind of column or cylinder, which was unrolled by the umbilicus as a handle. The outside of the volume was called *frons*; the ends of the umbilicus, *cornua*, which were usually carved, and adorned with silver, ivory, or even gold and precious stones. The whole matter, when extended, might make a yard and a-half wide and fifty long. To the form of books also belongs the internal economy. At first the letters were only divided into lines; then into separate words, which by degrees were noted by accents and distributed by points and stops into periods, paragraphs, chapters, and other divisions. During the eleventh century books were very scarce and valuable; then the art of making paper was discovered; manuscripts began to increase; learning and the liberal arts were again introduced into Europe, and the sale was thereby greatly facilitated. The first introduction of *printed books* seems to have been between the years 1430 and 1440; and the earliest instance of a book printed with the permission of the Government occurred, it is supposed, in 1480. This book was printed at Heidelberg; but neither the invention of paper, nor that of printing, made any immediate or violent innovation upon the then existing order of things. Types were made to imitate the slower process of writing, and the general appearance of MS. volumes was imitated. But the desire for books gradually widened, and eventually spread with amazing rapidity throughout Europe. Improvements after improvements were made in the types and paper, the former becoming clearer and smaller, and the latter thinner and stronger; the great folios and quartos gave way to octavos and duodecimos, and the book trade assumed a place in commerce of no little importance. The manufacture of a book now demands the assistance of various branches of mechanical skill besides the paper-maker, the type-founder, and printer, to whom it gives a large proportion of employment; it engages entirely the bookbinder. "Its material form has, till the present era of cheap publications, always born a commercial value extravagantly disproportionate to its matter, or that which alone constitutes its real worth; and were arguments required, a statement of these proportions would sufficiently demonstrate the reasonableness of a great reduction from former prices of books intended for public sale. Every purchaser of a book, as a rule, pays more to the paper-maker, the printer, and the binder, respectively, than to the author: and although peculiar circumstances may compensate him, the reader has no redress. He is obliged to pay the several principal manufacturers more than he is required to pay the real maker; and, so far as he is concerned, it is obvious that the privilege of determining for himself the extent of material expense is not only desirable for his own sake, but also favourable to the reputation, if not the gain, of the writer."—*Ripley and Dana*. *Bookseller* is defined as "one who deals or trades in books; the chief science of which is to know their titles, editions, dates, prices, and scarcity in the market." Publishing, properly speaking, is of modern date; but the selling of books dates far back, to the origin of literature itself. Among the ancients, booksellers were called *bibliopolæ*. They arose, towards the end of the republican age at Rome, when the literary tastes of the nobles demanded an increased supply of books. The bookseller's shop was called *libraria* or *taberna libraria*. In Rome the principal marts for books were the Argiletum and the Vicus Sandalarius, as Paternoster Row and St. Paul's Churchyard have been in London. The great booksellers in the time of Augustus were the brothers Sosii, who published the satires of Horace, the epigrams of Martial, and the "Institutes" of Quintilian. Diogenes Laertius established the existence of booksellers' shops or stalls about 250 B.C. Catullus speaks of looking into all the book-shops, and Pollux says they were common in all the seaport towns. After the fall of the empire bookselling, as a trade, was almost entirely abandoned. It was revived again on the founding of the Universities, and booksellers established themselves at Paris, Bologna, Vienna, Palermo, Padua, Salamanca, and Oxford. At Paris only a limited number were permitted, and they were prohibited from selling their volumes above a determined price, being obliged also to make a deduction on behalf of students. The booksellers were called *Stationarii*, from the fact of their places being fixed. The first printers acted as booksellers; nor did the two callings separate until it became advisable from considerations of commercial convenience and economy. John Faust disposed of the first edition of the printed Bible among the universities. Anthony Kober, of Nuremberg, printer and bookseller (1473–1513) had 24 presses, and about 100 workmen in his employ, and kept shops at Leipsic, Frankfort, Amsterdam, and Venice. In Germany sellers of books found their best opportunities at the periodical fairs. The first regular congregation of booksellers assembled at the Frankfort fairs, and that city for some time was the chief resort of the book trade. Subsequently Leipsic grew into favour, and finally became the centre of the trade throughout Germany. Now there are in Leipsic 82 commissioners (who buy and sell books on behalf of their principals), representing 2,275 firms, including dealers in books, music, maps, and charts, of whom 1,325 are retail booksellers located at 538 different places. At this great centre of trade there are representatives of booksellers in Switzerland, 87; Russia, 72; America, 22; Netherlands, 25; France, 21; Denmark, 24; Great Britain, 16; Sweden and Norway, 21; Belgium, 15; Spain, 2; Turkey, 3; and in Rome, Naples, Sardinia, and Australia, 1 each. In England, until 1600, bookselling made very little progress; its vitality, however, was never extinguished. At the Great Fire, it is said the booksellers lost about £200,000 in stock, but this statement is doubted. It took from 1623 to 1664 to sell two editions of Shakspeare. A catalogue of books published from 1666 to 1680 gives the whole number at 3,550, of which 947 were divinity, 420 law, and 153 physic; 397 were school-books, and 253 on subjects of geography and navigation. At the beginning of the 18th century the price of a folio or quarto volume ranged from 10*s.* to 12*s.*; and an octavo from 5*s.* to 6*s.* From 1700 to 1750 about 5,280 new works, exclusive of tracts and pamphlets, were issued, or about 93 per annum; while from 1750 to 1803 the average was nearly doubled. Subsequent to the reign of Anne and George I. there was a succession of men of literary repute connected with the Metropolitan book trade, among whom were Cave, the patron of Johnson, and Dodsley, a poet and dramatist, who reached the head of the bookselling profession. Richardson too, though a printer, became master of the Stationer's Company. The names of Baldwin, Rivington, Longman, Tonson, Millar, Cadell, Dilly, Lackington, and others are as familiar as those of the publishers of our own day. Before the year 1851 the sale of immoral and infidel publications was remarkably and lamentably great, amounting, it is estimated, to about 29,000,000 annually, more than the total issues of all the different Christian Societies throughout the kingdom. There were 1,650,000 copies of the last dying speech of Good; 1,666,000 of Courvoises; 2,000,000 of the Mannings; 2,500,000 of Rush; and 2,666,000 of Greenacre. After this an attempt was made to put down the circulation of this vile trash by cheapening the works of Bunyan, Milton, Johnson, Defoe, and others. The "*Pilgrim's Progress*" and the "Golden Treasury," "Robinson Crusoe," and "Paradise Lost" soon grew in popularity, and have to a great extent superseded the former publications. Now, as formerly, the book trade is centred in London, though carried on to a considerable extent in Edinburgh, and, in a less degree, in Oxford, Cambridge, Dublin, Glasgow, &c. There are various reasons for London being the metropolis of English literature. It is the centre of wealth, taste, and intellect; authors flock towards it as an agreeable and permanent home; and find in the library of the British Museum ample materials for reference and study. From it can be despatched conveniently assorted parcels of books to all quarters of the world; it is the great seat of the printing trade, and where artists and engravers are to be found for all classes of work. Besides, through its channels pass the news of the world. The London book trade is partly carried on in distinct departments. There are shops for the sale of books on science and art, others for the sale of religious works; books in different languages; books on genealogy and heraldry; works of fiction, and so forth. There are jobbing houses which supply retailers and buy largely from the publishers; societies with great and active establishments, whose annual issues of cheap and good publications are enormous; and large numbers of retail dealers in old and new books. The greater number of the commission and publishing houses are situated in Paternoster Row and the courts adjoining. The machinery employed for bringing books before the public is what are called "Trade sales." A catalogue of the books a publisher wishes to sell, and an invitation to dinner, are sent to large buyers, who, after the cloth has been drawn, transact business. At these sales business is often done to the extent of £10,000. The numbers of books sold are usually very large, as for example, 10,000 of Livingstone's "Travels," and 30,000 of "Brock's Life of General Havelock," 30,000 to 40,000 of Dickens's books, and perhaps the same number of Macaulay's. Publishers have also their agents at work in showing new works to the trade. If approved, the books are subscribed for at a price usually below that which is allowed when the volumes are in stock. In this manner large quantities are disposed of. Although the English trade is properly divided into two branches, we find them combined in one establishment. There is one department for bookselling and one for publishing, and it is almost needless to say that the success of the former depends on the amount of care, experience, and skill bestowed on the latter. The *publisher* manufactures the books, that is, he either buys the MSS. from authors, or agrees to publish on joint account, or undertakes to produce on commission. The items of outlay necessary in publishing new books are as follows:—Paper, composition per sheet, machining, illustrations, if any, binding, advertising, and the presentation copies sent to public institutions and to newspapers for review. A commission of 10 per cent. is charged to the account of books published at the author's risk and expense. A selling price is assigned to every book, from which a deduction of 25 per cent. is made to the bookseller in the first instance. Often an additional discount is allowed, and always in the case of the commission houses who supply the country trade. *Literary property* is of a nature different from any other; less permanent, of course less profitable. The right which an author may be supposed to have in his own original literary compositions, so that no other person without his leave may publish or make profit of the copies, is classed by Blackstone among the species of property acquired by *occupancy*, being grounded on labour and invention. When a man by the exercise of his rational powers has produced an original work, he seems to have clearly a right to dispose of that identical work as he pleases, and any attempt to vary the disposition he has made of it appears to be an invasion of that right. The identity of a literary composition consists entirely in the sentiment and the language. The same conceptions clothed in the same words must necessarily be the same composition; and whatever method be taken of exhibiting that composition by writing or by printing in any number of copies or at any period of time, it is always the identical work of the author, and no other man, it has been thought, can have a right to exhibit it, especially for profit, without the author's consent. This consent may perhaps be tacitly given to all mankind when an author suffers his work to be published by another hand without any claim or reserve of right, and without stamping on it any marks of ownership. But in case the author sells a single book, or totally grants the copyright, it has been supposed in the one case that the buyer has no more right to multiply copies of that book for sale than he has to imitate for the like purpose the ticket which is bought for admission to an opera or a concert; and on the other, that the whole property, with all its exclusive rights, is perpetually transferred to the granter. On the other hand, it is urged that though the exclusive property of the manuscript and all which it contains undoubtedly belongs to the author before it is printed or published, yet from the instant of publication the exclusive right of an author or his assigns to the sole communication of his ideas vanishes; as being a right of too subtle and unsubstantial a nature to become the subject of property in the common law, and only capable of being guarded by positive statutes, and special provisions of the magistrates. *The Act which now deals with literary property is 5 and 6 Vic. c. 45*, in which we find :—"That the copyright in every book which shall after the passing of this Act be published in the lifetime of its author shall endure for the natural life of such author and for the further term of seven years, commencing at the time of his death, and shall be the property of such author and his assigns; provided always that if the said term of seven years shall expire before the end of forty-two years from the first publication of such book, the copyright shall in that case endure for such period of forty-two years; and that the copyright in every book which shall be published after the death of the author, shall endure for the term of forty-two years from the first publication thereof, and shall be the property of the proprietor of the author's manuscript from which such book shall be first published, and his assigns." *In cases of subsisting copyright the term may be extended. Clause* 4 enacts :—"That the copyright which at the time of passing this Act shall subsist in any book theretofore published (except as hereinafter mentioned), shall be extended to and endure for the full term provided by this Act in cases of books thereafter published, and shall be the property of the person who at the time of passing this Act shall be the proprietor of such copyright; provided always, that in all cases in which such copyright shall belong in whole or in part to a publisher or other person who shall have acquired it for other considerations than that of natural love and affection, such copyright shall not be extended by this Act, but shall endure for the term which shall subsist therein at the time of passing of this Act and no longer, unless the author of such book, if he shall be living, or the personal representative of such author, if he shall be dead, and the proprietor of such copyright shall before the expiration of such term consent and agree to accept the benefits of this Act in respect of such book, and shall cause a minute of such consent in the form in that behalf given in the schedule to this Act annexed, to be entered in the book of registry hereinafter directed to be kept, in which case such copyright shall endure for the full term by this Act provided in cases of books to be published after the passing of this Act, and shall be the property of such person or persons as in such minute shall be expressed." *Clauses* 6 and 10 exact that a printed copy of the whole of every book which shall be published after the passing of this Act, and also of any "second or subsequent edition which shall be so published, with any additions or alterations, whether the same shall be in letterpress or in the maps, prints, or other engravings belonging thereto, and whether the first edition of such book shall have been published before or after the passing of this Act, and also of any second or subsequent editions of every book of which the first or some preceding edition shall not have been delivered for the use of the British Museum, bound, sewed, or stitched together, and upon the best paper on which the same shall be printed, shall within one calendar month after the day on which any such book shall first be sold, published, or offered for sale within the bills of mortality, or within three calendar months if the same shall first be sold, published, or offered for sale in any other part of the United Kingdom, or within twelve calendar months after the same shall first be sold, published, or offered for sale in any other part of the British dominions, be delivered on behalf of the publisher thereof at the British Museum." Also, "That if any publishers of any such book or of any second or subsequent edition of such book shall neglect to deliver the same, pursuant to this Act, he shall for every such default forfeit, besides the value of such copy of such book or edition which he ought to have delivered, a sum not exceeding five pounds." A copy of every book must also be delivered within a month after demand to the office of the Stationers' Company for the following libraries :—The Bodleian, at Oxford; the Public Library at Cambridge; the Faculty of Advocates at Edinburgh; and that of Trinity College, Dublin. *Piracies.* "Copyright may be invaded in several ways :—(1) By reprinting the whole work verbatim. (2) By reprinting verbatim a part of it. (3) By imitating the whole or a part, or by reproducing the whole or a part with colourable alteration. (4) By reproducing the whole or a part under an abridged form. (5) By reproducing the whole or a part under the form of a translation."—*Copinge.*

PUMICE STONE. [Ger. *Bimstein*, Du. *Puim*, *Puimsteen*, Da. *Pimpstein*, *Bimsteen*, Sw. *Pimsten*, *Klasten*, Fr. *Pierre ponce*, It. *Pietra pomice*, Sp. *Piedra pomez*, Port. *Piedra pomes*, Rus. *Penza*, Pol. *Zuzel Kamienna*, Lat. *Pumex*]. This seems rather a volcanic ejection than a volcanic product; its colour is grey, white, reddish-brown, or black. It is hard, rough, and porous, and consists of slender fibres parallel to each other; very light, for it swims on water, and with difficulty gives fire with steel. The whitest pumice-stone is the lightest.

Q

QUADRANT denotes a mathematical instrument of great use in astronomy and navigation, for taking the altitudes of the sun and stars, as also taking angles in surveying heights and distances, &c. This instrument is variously contrived, and furnished with different apparatus, according to the various uses it is intended for; but they have all this in common, that they consist of the quarter of a circle, whose limb or arch is divided into 90 degrees, &c.

Quarantine, a regulation for the exclusion contagious diseases from a port. By it men id animals affected by, or suspected of, congion are subjected to a probationary confineent until all appearance of disease has dispeared. The period of such detention ries according to circumstances, and by no eans extends in all cases to the original forty ys from which the name of the regulation derived.

Quarterdeck of a ship is the short upper ck.

Quarter-wind, at sea, a wind that blows upon the ship's quarter. A quarter-wind is that which comes in abaft the mainmast shrouds, even with the quarter of the ship. It is the best of all winds, as filling all the sails: whereas a wind blowing full in the stern is kept off by the mizzen and mainmast.

Quartern, the quarter of a pint, dry measure.

Quarto, a book in which every sheet, being twice doubled, makes four leaves, or eight pages.

Quartz. Some chemists make a distinction between quartz and rock-crystal. Cronstedt arranges the latter as a species of the former, as also does Kirwan. In general, those crystals of the siliceous order which are clear and perfect, and do not crack in the fire, are called rock-crystals; and those which are coloured, full of flaws, rounded and irregular, are called quartz. The transparent quartz, or rock-crystal, is either colourless and crystallized in hexagonal pyramids, and then called mountain-crystal, or in various other forms, or irregular. The purest and most transparent of these crystals form the false diamond, called Bristol or Kerry stone, diamant d'Alençon, &c.

Quebec, a port of entry, and commercial capital of Canada, situated on the N.W. bank of the St. Lawrence, at its confluence with the St. Charles, about 360 miles from the Gulf of St. Lawrence, and 180 miles N.E. from Montreal. *Lat.* 46° 49′ 12″ N., *Long.* 71° 16′ W. *Pop.* about 60,000. This port is the principal centre of maritime commerce in British America, and one of the largest timber and lumber ports on the American continent. *Imports.* The principal articles are woollen, cotton and silk goods, iron, hardware, coal, groceries, and salt. The *Exports* consist principally of ships' lumber and grain. The timber, deals, and cabinet work of the Dominion are sent mainly to the United Kingdom, and the breadstuffs to the English colonies of North America. There are some manufactories of distilled and fermented liquors, leather, tobacco, soap, &c. *Banks.* Bank of British North America; Head Office, 124, Bishopgate Street Within, E.C.; Bank of Montreal; agents, Union Bank of London.

Canada is the most important province of North America. It lies nearly all between the Hudson's Bay territories and the United States, and within the basin of the St. Lawrence. *Area* and *pop.* of the four provinces forming the Dominion: Ontario, 121,260 English square miles, pop. 1,396,091; Quebec, 210,020 miles, pop. 1,111,566; Nova Scotia, 18,671 miles, pop. 330,857; New Brunswick, 27,037 miles, pop. 252,047: total area, 376,988 miles, pop. 3,090,561. Agriculture is the chief employment of the population. The great staple product is wheat, of which the highest average produce in any township has been 26 bushels, and the lowest 6. Lumbering and shipbuilding, measured by the value of the products, are the next most important branches of industry; manufactures are inconsiderable. *Trade.* The trade of Canada is chiefly with the United States and the United Kingdom, the greater part of the imports being derived from Great Britain, but the greater part of the exports going to the United States. *Exports* in 1868 were minerals, fish, timber, animals, manufactures, agricultural produce, amounting to 57,567,888 dols.: and the *Imports* were woollen and cotton goods and iron principally, amounting to 73,459,644 dols. *Shipping.* There were owned, in 1868, in the Dominion, 5,822 vessels, of the total burden of 776,343 tons. *Money.* The dollar = 4*s.* 2*d.* *Weights and Measures.* British weights and measures are usually employed, but the old Winchester gallon and bushel are chiefly used. Wine gallon = 0·83333 gallon; ale gallon = 1·01695; bushel, 0·9692 impl. bushel; 1 cwt. = 100 lb., 1 ton = 2,000 lb. avoir.

Quills [Ger. *Posen*, *Federkiele*, Du. [illegible]*nen*, *Penneschagten*, Da. *Penne*, Sw. *P*[illegible], Fr. *Tuyeux*, It. *Cannoni ò penne da* [illegible], Sp. *Canones para escriber*, Port. *C*[illegible] *escrever*, Rus. *Stivoli*, Pol. *Pi*[illegible]*ke*], large feathers taken out of the end of the wings of geese, ostriches, swans, turkeys, crows, &c. They are denominated according to the order in which they are fixed in the wing, the second and third quills being the best for writing, as they have the largest and roundest barrels. Crow-quills are chiefly used for drawing.

Quinine, a vegetable alkaloid, extracted from the bark of the cinchona tree, and used as a medicine.

Quotient, in arithmetic, is the number produced by the division of two given numbers, the one by the other.

R

Raisins [Ger. *Rosinen*, Du. *Rozynen*, Da. *Rosiner*, Sw. *Russin*, Fr. *Raisens secs, ou passés*, It. *Uve passe*, Sp. *Pasas*, Port. *Passas*, *Passa de uvas*, Rus. *Issum*, Pol. *Rozynki*, Lat. *Uva passa*], grapes prepared by suffering them to remain on the vine till they are perfectly ripe, and then drying them in the sun, or by the heat of an oven. The finest and best raisins are those called in some places Damascus and Jube raisins, which are distinguished from the others by their size and figure. These are flat and wrinkled on the surface, soft and juicy within, and near an inch long, and, when fresh and growing on the bunch, are of the size and shape of a large olive. The raisins of the sun and jar raisins are all dried by the heat of the sun, and these are the sorts used in medicine. The names by which raisins are distinguished among traders are the following, and the order in which they are placed denotes their relative value, the first being the most esteemed, *viz.*: Muscatels, sun, or solis, bloom, or jar, Belvedere, Denia, or Malaga, Sultana, Lipari, and Smyrna, black and red. The best of these kinds are imported in boxes and jars, and the most inferior in mats. Spain is the country which supplies us with the greatest quantities of this article.

Rape-Oil [Ger. *Rübol*, Du. *Raapöli*, Da. *Roeolje*, Sw. *Rofolja*, Fr. *Huile de navette*, It. *Olio di ravizzone*, Sp. *Aceite de nabina*, Port. *Oleo de nabica*, Rus. *Răpnoe masslo*] is expressed from the rape-seed; it is used in the manufacture of wool, for burning in lamps, and [illegible] serve instead of train-oil when there is a [illegible]ity of the latter. Its good qualities are, [illegible] colour, an agreeable smell, and a sweet [illegible] is sometimes mixed with linseed oil; [illegible] alteration is discovered by its bitter[illegible]ss agreeable smell. The seeds [illegible]pe-oil has been extracted are [illegible]p in lumps, and constitute what [illegible] seed cake. This, like linseed-[illegible]med good fodder for cattle, but it [illegible] their flesh a rancid, oily [illegible] *Rübsaamen*, *Rübsen*, Du. [illegible], Sw. *Roffrö*, Fr. *Graine* [illegible], Sp. *Nabina*, Port. [illegible] Rus. *Rapnoe semja*, [illegible] *napus sativa*, [illegible] *rapa*, called in [illegible]ned by Linnæus [illegible] cabbage-kind. This [illegible] many parts of England [illegible]age, particularly in Lincoln-[illegible] Cambridgeshire, on account of the [illegible] pressed from its seeds. The culti-[illegible] it was first introduced by those Ger-[illegible] and Dutch who drained the fens of [illegible]colnshire; and hence the notion has erroneously prevailed that it will only thrive in marshy soil. It is to be sown about midsummer. In the months of January, February, and March it affords very good food for cattle, and will sprout again when cut; after which it [illegible] excellent nourishment for sheep, and after all, if not too closely fed, will bear seed against July.

Rattans, or **Ratans** [Ger. *Rottings*, Du. *Rottingen*, Da. *Rottinge*, Sw. *Rottingar*, Fr. *Rotins*, *Ratans*, It. *Gaune*, *e cannette di India*, Sp. *Bejuquillos*, Port. *Canicos de India*], are the small shoots or branches of the sugar-cane, brought to us from the East and West Indies. When polished and mounted, they are used as walking-sticks.

Razors [Ger. *Rasiermesser*, *Scheermesser*, Du. *Scheermessen*, Da. *Rageknive*, Sw. *Rakknifvar*, Fr. *Rasoirs*, It. *Rasii*, Sp. *Navajas de afeitar*, Port. *Navalhas*, Rus. *Britwii*, Pol. *Brzytwy*], instruments too generally known to need any particular description. The best razors are those manufactured at London and Sheffield, the razors of Birmingham being of a very inferior sort. We export razors to most parts of the European continent, as well as to Asia and America, and, in very small quantities, to Africa. Old razor-blades are usually made into penknives, which are in great request.

Realgar, or **Rosalgar** [Ger. *Rauschgelb*, Du. and Da. *Rusgeel*, Sw. *Rauschgelb*, Fr. *Réalgar*, *Réagal*, It. *Risigallo*, Sp. *Rejalgar*, Port. *Rosalgar*, Rus. *Krasnoi arsenik*, Pol. *Sandaraka*, Lat. *Risigallum*], generally called *redorpiment*, is of two kinds, native and factitious. The native is dug out of the same mines with orpiment, being of a cinnabar-colour, and smelling like sulphur and garlic, when burned and made up in solid brittle globes. The factitious kind is made of orpiment melted and boiled for some time in subliming vessels, by which the yellow flowers are raised to the upper part of the vessels, and the mass remaining at the bottom, being condensed by cold, becomes of a red colour like cinnabar; which, if exposed to a free air for a long time, becomes covered with a soluble efflorescence. This realgar is not to be confounded with the factitious red arsenic.

Ream. The ream of writing paper consists of twenty quires; but the ream of printing paper, or, as it is sometimes called the *Printer's ream*, extends to 21½ quires, or 516 sheets. Two reams of paper make a *bundle*.

Red Ochre, **Brown Red**, or **Spanish Red** [Ger. *Braunroth*, Du. *Bruinrood*, Da. *Brunrödt*, Sw. *Brunröd*, Fr. *Brun rouge*, *Rouge brun*, It. *Rosso bruno*, Sp. *Almagre colorado*, *Almazarron*, Port. *Almagre*, *Almagra*], is produced by subjecting the species of earth called yellow ochre to the action of fire till it becomes perfectly red or nearly brown. Red ochre is much used by painters, and is esteemed a good standing colour.

Reed [Ger. *Rohr*, Du. *Riet*, Da. and Sw. *Rör*, Fr. *Roseau*, It. *Canna*, Sp. *Cana*, Port. *Cana*, Rus. *Trost*, Pol. *Trzina*, Lat. *Arundo*.] The chief species of reeds, of any importance in a commercial point of view, are the following:—1. The *arundo donax*, or cultivated reed, a native of warm countries, yet it will bear the cold of our winters in the open air. The stalks of this are brought from Spain and Portugal, and are used by weavers, and also for making fishing-rods. 2. The *arundo orientalis*, or oriental reed, which the Turks use as writing pens; it grows in a valley near Mount Athos, as also on the banks of the River Jordan. 3. *Arundo versicolor*, or Indian varie-

---

cas.
whole
who sha
tions than
such copyri
Act, but shall
subsist therein a
Act and no longer,
book, if he shall be
representative of such
dead, and the proprietor
before the expiration of such
agree to accept the benefits of the
spect of such book, and shall ca
such consent in the form in th
in the schedule to this Act
entered in the book
directed to be kept
right shall e
Act provided
after the
property
minut
exac

gated reed, supposed to be a variety of the *donax*, differing from it only in having variegated leaves.

REEF, a term in navigation. When there is a great gale of wind, they commonly roll up part of the sail below, that by this means it may become the narrower, and not draw so much wind; which contracting or taking up the sail they call a *reef*, or *reefing* the sail So also, when a topmast is sprung—that is, when it is cracked, or almost broken in the cap—they cut off the lower piece that was nearly broken off, and setting the other part, now much shorter, in the step again, they call it a *reefed topmast*.

REEL [*Reels*, Ger. *Haspeln*, Du. *Haspels*, Da. *Hasper*, Sw. *Hasplar*, *Hārflar*, Fr. *Dévidoirs*, It. *Naspi*, *Naspoli*, *Aspi*, Sp. *Argadillos*, Port. *Devanaderas*, Rus. *Motowila*, Pol. *Motowidla*], in the manufactories. There are various kinds of reels, some very simple, others are complex. Of the former kinds, those most in use are:—1. A reel held in the hand, consisting of three pieces of wood, the biggest and longest whereof (which does not exceed a foot and a half in length, and a quarter of an inch in diameter) is traversed by two other pieces disposed different ways. 2. The common reel, or windlass, which turns upon a pivot, and has four flights traversed by long pins or sticks, whereon the skein to be reeled is put, and which are drawn closer, or opened wider, according to the skein.

RE-EXCHANGE, or RE-CHANGE, a second payment of the price of exchange, or rather, the price of a new exchange, due upon a bill of exchange that comes to be protested, and must be refunded to the bearer by the drawer or endorser. The occasion of re-exchange is when the bearer of a bill of exchange, after protesting it, for want either of acceptance or payment, borrows money on his own bond, promise, or the like; or draws a bill of exchange in the place where the payment was to be made, on the person who furnished the first; for which he pays a second exchange, which being added to the first already paid, the drawer of the first bill makes two exchanges, properly called exchange and re-exchange.

REGAL FISHES are whales and sturgeons; some add porpoises. The king, by his prerogative, ought to have every whale cast on shore, or wrecked, in all places within his realm (unless granted to subjects by special words), as a royal fish. The king himself shall have the head and body to make oil and other things, and the queen the tail to make whalebones for her royal vestments.

RESPONDENTIA. When money is lent upon the goods and merchandise laden on a ship, which, from their nature, must be sold or exchanged in the course of the voyage, then the borrower only is personally bound to answer the contract; who, therefore, in this case, is said to take up money at *respondentia*. In this consists the difference between respondentia and bottomry: that the former is a loan upon the goods, the other upon the ship and tackle. In the former, for the most part, recourse must be had to the person of the borrower; in the latter, the ship and tackle are liable, as well as the person of the borrower.

RHEA, a species of nettle, which can be grown in any quantity in nearly all tropical and semi-tropical countries Its stalk contains an excellent spinning fibre, and is covered with an outer skin or bast, useful in papermaking. The difficulty has hitherto been to devise suitable means for separating the fibre from the woody portion of the bast at a sufficiently cheap rate to make the material command a ready sale. A prize of £5,000 was offered in 1872 by the Indian Government for the best machine capable of effecting that object, at a cost not exceeding £15 per ton, and allowing the fibre to be sold in England at £50 per ton, but the plan came to nothing. The Government now offers to deliver in this country quantities of China grass in its green state to those who wish to experiment upon it. The fibre will be delivered free of charge, and one or more packages of 70 lb. each may be obtained on application at the India Office. This textile is produced in large quantities in China, and is made up into what is called grass cloth, a more expensive but stiffer and less porous fabric than cotton cloth. The prepared rhea fibre resembles the finest qualities of Orleans cotton, but is much longer in staple, and looks more glossy. It combines the strength and firmness of linen with the softness of cotton, and has a more silken appearance than either, and may yet prove valuable grist for our insatiable mills.

RHUBARB [Ger. and Du. *Rhabarber*, Da. and Sw. *Rabarber*, Fr. *Rhubarbe*, *Rubarbe*, It. *Rabarbaro*, *Reobarbaro*, Sp. and Port. *Ruibarbo*, Rus. *Rewen*, Pol. *Reubarbarum*, *Rum tureckie*, Lat. *Rhabarbarum*, *Reum palmatum*]. Two sorts of rhubarb are met with in the shops. The first is imported from Turkey and Russia, in roundish pieces, freed from the bark, with a hole through the middle of each; they are externally of a yellowish colour, and on cutting appear variegated with lively reddish streaks. The other, which is less esteemed, comes immediately from the East Indies, in longish pieces, harder, heavier, and more compact than the foregoing. The first sort, unless kept very dry, is apt to grow mouldy and worm-eaten; the sec[illegible] subject to these inconveniences. [illegible] more industrious artists are said to [illegible] up the worm-holes with certain mixtures, and to colour the outside of the damaged pieces with powder of the finer sorts of rhubarb, and sometimes with cheaper materials. This is often so nicely done as effectually to impose upon the buyer, unless he very carefully examines each piece. The marks of good rhubarb are—that it is firm and solid, but not flinty; that it is easily pulverised, and appears, when powdered, of a fine bright yellow colour, while upon being chewed, it imparts to the spittle a saffron tinge, without proving slimy or mucilaginous in the mouth. Its taste is sub-acrid, bitterish, and somewhat astringent, with a smell lightly aromatic.

Rice [Ger. *Reis*, *Reiss*, Du. *Ryst*, Da. *Riis*, Sw. *Ris*, Fr. *Ris*, *Ris*, *Ryz*, It. *Riso*, Sp. *Arroz*, Port. *Arros*, *Arros*, Rus. *Pscheno sarasinskoe*, Pol. *Ryz*, Lat. *Oryza Risum*] is a plant very much resembling wheat in shape and colour, and in the figure and disposition of its leaves. The panicle which terminates the stem is composed of small flowers, distinct from each other, which have four unequal scales, six stamina, and one pistil, surrounded with two styles; this pistil becomes a white seed, extremely farinaceous, covered with two interior scales. The cultivation of rice is most vigorous throughout Asia; and indeed this species of grain is the ordinary food of the inhabitants of China, India, Persia, Egypt, and almost the whole of the territories of the Grand Signior of former days. Rice is of two kinds—namely, the ordinary rice and the fine rice. The first is that with which we are best acquainted, and it is usually grown in low marshy grounds.

Rine-Hemp [Ger. *Reinhanf*, Du. *Rynkennip*, Da. *Reenhamp*, Fr. *Chanvre net*, Port. *Linho canhamo da primeira sorte*], so-called from the German *Reinhanf*, is nothing more than the best sort of hemp, cleaned, or freed from every species of impurity, and from all foreign matter.

Rope, hemp, hair, &c., spun into a thick yarn, and then several strings of this yarn twisted together by means of a wheel. When made very small it is called a cord, and when very thick, a cable. All the different kinds of this manufacture, from a fishing-line or whipcord to the cable of a first-rate ship of war, go by the general name of cordage. Ropes are made of every substance that is sufficiently fibrous, flexible, and tenacious, but chiefly of the inner barks of plants. The Chinese and other Orientals even make them of the ligneous parts of several plants, such as certain bamboos and reeds, the stems of the aloes, the fibrous covering of the cocoa-nut, the filaments of the cotton-pod, and the leaves of some grasses, such as the sparte. The aloe and the sparte exceed all others in strength. But the barks of plants are the most productive of fibrous matter fit for this manufacture. Those of the linden tree, the willow, the bramble, the nettle, are frequently used; but hemp and flax are the best; and of these the hemp is preferred, and employed in all cordage exceeding the size of a line, and even in many of this denomination.

Ruby [Ger. *Rubin*, Du. *Robyn*, Da. and Sw. *Rubin*, Fr. *Rubis*, It. *Rubino*, Sp. *Rubi*, Port. *Rubim*, Rus. *Jachont tscherirtschatoi*, Pol. *Rubin*, Lat. *Rubinus*], a genus of precious stones of various colours; as—1. Of a deep red colour, inclining a little to purple: the carbuncle of Pliny. 2. The spinell, of the colour of a bright corn poppy-flower. 3. The balass, or pale red, inclining to violet. According to Cronstedt, the ruby crystallizes into an octahedral form, as well as the diamond, from which it differs very little in hardness and weight. Tavernier and Dutens inform us that in the East Indies all coloured gems are named rubies, without regard to what their colours may be, and that the particular colour is added to the name of each, in order to distinguish them from one another. There are, however, some soft stones of this kind, which are called bacan, and it is certain that the hard and brilliant rubies named oriental, as well as the sapphires and topazes, are all the same, excepting only the circumstance of colour. Some are partly red and partly blue, and some yellow.

Rule of Three, in arithmetic, is so called because, by three numbers being given, we find a fourth; and it is divided into the rule of three direct, inverse, and the double rule of three.

Rum [Ger. and Du. *Rum*, Da. *Rom*, Sw. *Rom*, *Rum*, Fr. and It. *Rum*, Sp. *Ron*, *Rom*, Port. *Ron*, Rus. *Rom*], a well-known spirituous liquor, made in the West Indies from the sugar-cane, &c. The rum, which is of a brownish, transparent colour, of a smooth oily taste, of a strong body and consistence, of a good age, and well kept, is the best. That of a clear, limpid colour, and hot pungent taste, is either too new, or dashed with foreign spirits. The best state in which rum can be imported or preserved is that of rectified spirit, as it may thus be conveyed in one half of its usual compass, and afterwards reduced to the proper degree of proof strength by means of spring water. Jamaica rum is the first in point of quality imported into this country, the Leeward Island rum, as it is called, being always inferior to it, both in flavour, strength, and value.

Russia, an empire, the largest in the world, extending from Pyzday, in Poland, on the Prussian border, to the N.E. point of Queen Charlotte's Island in N. America, or from 17° 40′ to 232° 30′ E. *Long.*, and S. to N. from 38° 25′ to 78° 26′ N. *Lat.*, or from the most southerly inhabited points of the empire, the mouth of the Astaro River, on the Caspian, to Cape Severo-Vostotchnoi, in Siberia. *Area.* 369,817 German square miles = 7,769,781 English square miles. *Pop.* 77,008,448. The empire comprises one-seventh of the territorial parts of the globe, and about one twenty-sixth part of its entire surface. *Divisions.* Russia in Europe (exclusive of Finland and Poland), Finland, Poland, Siberia, Government of the Caucasus. *Principal towns.* Astrakhan, pop. 42,832; Berditcheff, 53,169; Kasan, 63,084; Kharkoff, 52,056; Kherson, 40,169: Kichineff, 44,124; Kieff, 68,424; Kronstadt, 48,413; Mohileff, 48,205; Moscow, 351,627; Nicolaieff, 64,561; Odessa, 118 970; St. Petersburg, 546,000; Riga, 77,468; Saratoff, 62,923; Tiflis, 60,776; Vilna, 69,464; Warsaw, 243,512. *Forests.* "Estimating the surface of European

Russia at 402,100,562 dessiateens (dessiateen = 2·691 English acres), 156,000,000 of this number are occupied by forests; 178,000,000 by uncultivated land, water, houses, and roads; 61,500,000 by arable, and a little more than 6,000,000 by meadow land. On this general view of the surface we may compute that one dessiateen of wood occurs to every two, and five-ninths of a dessiateen without it. The forests, indeed, constitute a source of riches which may long continue inexhaustible, and which might be indefinitely increased by strict regulations for their economy and management. 76,000,000 of dessiateens are still completely covered with pines, firs, and other cone-bearing trees, without counting the oaks, maples, beeches, poplars, and elms, which are by no means rare in the latitudes within the 52nd degree; and the birch, which grows in still more northern regions."—*Schnitzler. Agriculture.* The grasses most commonly cultivated are rye and oats. The best wheat is produced in Southern Russia, and in the eastern governments of Kazan, Seembeersk, and Orenburg, where also, along with millet, a little flax is raised. Hemp and flax are very largely cultivated, and yield not only materials for the manufactories of the country, but a large surplus for exportation. Whilst corn and cattle constitute the riches of the Central districts, the Southern abounds in productions of a more delicate nature. The cultivation of the vine, the mulberry-tree, and the sugar-cane have been fostered to a considerable extent in the South. In the Crimea and countries of the Caucasus the rearing of the silkworm has been upon the whole favourable. Russia further produces hops and tobacco; Spanish pepper and mustard-seed on the Sanrara and Lower Volga; poppy in Kharkoff; rhubarb, which grows wild in Taurida; rhapontick, which grows wild in the Oorals; *Polygonum Ninus*, which in the Ukraine engenders worms that yield a beautiful crimson dye. *Animals.* Cattle of every description are bred in vast numbers in the steppes, and they have increased with the improvement of agriculture. Black cattle and oxen are raised, especially in Podolio and the Ukraine; sheep are reared to a great extent. The merino breed has been naturalized in Little Russia, in the governments comprised under the name of New Russia, and in those of the shores of the Baltic. The breed of horses has been considerably improved by crossing the best natives with Arab, English, and Flemish races. The camel inhabits the steppes of the Taurida; and the goat, sheep, swine, and other tame animals exist in the usual proportions and qualities. *Minerals:* in Russia very rich. The chief mines are situated in the Ooral and Altai mountains, and those in the vicinity of Nertschinsk, in Siberia. Copper is produced in the same ranges, also in Olouetz. *Commerce.* The *trading ports* on the German coast of the Baltic are St. Petersburg, with its ports of Cronstadt, Narva, Revel, Arensburg, Pernan, Riga, Windau, and Lisbau. Of these ports the first two are frozen up for six months. On the coast of Finland, Wyburg, Lovisa, Helsingfors, Abo Nystad, New Carlaby, and Torneo; in the Arctic Ocean, Kola; on the White Sea, Archangel and Onega: Petropavlovsk on the Kamschatkhan Sea; and on the N. Pacific, Silkha, the capital of the possessions of the American Company; on the Sea of Azoff, Taganrog, Marinopol, Kertch, Berdiansk; on the Black Sea, Odessa, Theodosia; on the Caspian, Astrakhan, Bakoo, Derbent. *Exports.* "The chief to European countries were in 1867:—cereals, 93,979,052 roubles, being an increase of 20 million roubles over the preceding year; flax seed (linseed), 18,360,342 roubles; total 11,826,288 roubles; wood, various kinds, 10,650,753 roubles; raw wool, 9,613,615 roubles; being a decrease of 6 millions over the preceding year; and hemp, 8,674,182 roubles. *The principal imports* into Russia from Europe were raw cotton, 38,039,858 roubles; unwrought metals, 21,520,081, an increase of nearly 13 millions; machinery, 15,022,671, an increase of nearly 5 millions; metal wares, 14,709,268 roubles, an increase of 4 millions; tea, 14,345,575 roubles, an increase of 5 millions; and colours, 11,030,861 roubles. Among the other imports figured wool above 8 million roubles, and woollen goods, 6 millions, being an increase of 3 millions and 2 millions; cotton goods nearly 4 million roubles, an increase of a million; spun cotton nearly 5 millions; silk, 5 millions, and silk goods, 5 millions, an increase of more than 2 millions in the former article, and nearly 2 millions in the latter; linen tissues, 3½ millions, an increase of a million; agricultural implements, nearly a million and a half, being an increase of 800,000 roubles; drinks, 8 millions, an increase of a million; fruit, 5 millions; ladies' dress being a million; tulle and lace, half a million. Among the exports not before enumerated were cattle, 4 millions; horses, 354,000 roubles; furs, 732,000; cloth, 363,000; rags, 353,000 roubles."—*Statesman's Year Book.* Total value of the imports for home consumption, and of the exports of Russia, including Finland, in each year, from 1863 to 1867 in sterling:—

	Imports. £	Exports. £
1863	24,493,849	24,458,250
1864	27,757,705	29,567,970
1865	26,014,960	33,130,898
1866	32,503,932	35,293,870
1867	42,002,754	38,759,084

Industries. One of the most ancient and natural branches of Russian industry is that of dressing *leather*, and manufacturing it into boots, trunks, and other useful articles. [illegible] estab- quantities of leather are annual[illegible] with fair success, and the protectio[illegible] in Russian Turkestan as [illegible] foreign leather i[illegible]end, and there is no re[illegible] its importation i[illegible]on should not be extend[illegible] The country is indeed, the climate an[illegible] countries, and the [illegible], and the adjoining red leather enti[illegible]

Vladimir, Nijeorod, and Tver occupied in the preparation and manufacture of leather. But many of these tanneries are unworthy of notice; the good tanneries are indeed rare, and as Mr. Fedchenko observes, may be counted upon the fingers. The great bulk of the tanned leather and of the manufactures in leather are as yet in a very backward state. It does not correspond with the resources of Russia, so rich, both in the raw material and in the cheapness of labour. Fine, dear, and fashionable articles in leather are principally imported from abroad ready made, or they are made up in Russia from foreign materials. *Bronzes*, manufacture of, was first commenced in 1820, prior to which French bronzes, imported free of duty, held possession of the market. It has ever since been in the hands of foreigners, and no Russian manufacturer has exhibited bronzes at the eleven exhibitions that have been held in Russia. There are about thirteen manufactories of these articles, of which twelve are at St. Petersburg, and one at Moscow. *Tallow and candles*. The tallow trade of Russia has retrogressed; from being one of the principal articles of export, the trade in it with foreign countries has fallen to nearly half its former extent. No attention, or very little, has been paid to the improvement of native breeds of cattle, which have been left to the Steppes and the plague. Hundreds of thousands of herds have perished in this way, and the natural consequence is that the supply of tallow has been greatly reduced. While the cattle of the Steppes are still being swept off by disease in herds, the peasantry are not able to do much in the direction of improving their cattle, and the want of capital equally prevents the large landed proprietors from introducing a more extended and improved grazing of cattle. The Crimean war stimulated the exportation of tallow from South America and Australia, and at its close the tallow speculators of Russia, still thinking they held the old monopoly, kept up its price artificially, and, while in many cases ruining themselves, drove the customers of tallow still more into other markets. In these improved processes of melting have been adopted, and, particularly in America, greatly to the advantage of this important article of commerce, both in quality and price. But the home consumption of tallow has been on the increase. The manufacture of stearine tallow and other descriptions of candles is greatly increasing in Russia, and with it the price of the raw material. The total quantity of stearine candles is about 7,250 tons, or about 2,500 tons below the production of France. The total quantity of tallow candles manufactured is estimated at 95,500 tons. The principal manufactory of stearine candles in Russia and in the world (the Nevsky Works at St. Petersburg) belongs to an English company. The prices of the stearine candles range from 7*d.* to 9*d.* *Textile fabrics*. The *linen* industry is the most truly national. Flax is a growth especially suited to the soil and climate of the northern governments of Russia. The Baltic provinces, and the neighbouring governments, supply the best; the more northern governments, such as Katka, the coarser qualities. Flax is also grown in the provinces bordering on the Black and Azoff Seas. The value of the flax and linseed exported from Russia may be taken on an average as forming rather more than a quarter of the total exports. Some idea of the progress of this production may be found from the following statement:—

EXPORTS.

	1861.	1869.	Increase.	Decrease.
Flax (combed) .. Puds (of 36 lb. av.)	3,424,361	6,014,042	2,589,681	....
Tow............ ,,	833,517	1,067,265	233,748	....
Flax and hemp yarn ,,	251,307	236,810	....	14,497
Sail-cloth and coarse linen......Pieces	26,081	32,384	6,303	....
Sackcloth, &c. ....Yards	2,733,339	11,519,728	8,786,389	....

On the other hand, the value of the imports, which consist chiefly of the finer kinds of linen, fell from £340,838 in 1861 to £274,436 in 1869. The increase of the exports of linen is thus out of all proportion greater than the decrease of the imports, and this increase, moreover, has been steady and regular. Linen was manufactured in Russia in the reigns
-1·645–76) of Michael and Alexis Romanoff,
minatiour almost be called the founders of the
RUBY [Ger. Scmurinr industry. Ever since
Sw. *Rubin*, Fr. *Rubis*, It. *Ras*; but it was the
Port. *Rubim*, Rus. *Jachont* using the tempo-
Pol. *Rubin*, Lat. *Rubinus*], 1of American cot-
cious stones of various colour: impetus to the
deep red colour, inclining a little to-isis much
the carbuncle of Pliny. a. The spinelispecially
in the Kostroma government), and peasants in certain districts sowed every available acre with flax, tempted by the high prices which then prevailed. The statistics of Russian industry are still somewhat rough and imperfect, yet we cannot be far wrong in stating that the Empire, including Finland and Poland, had, in 1870, 708 flax and linen mills, employing 27,700 hands, and producing annually goods to the value of £1,432,000. The flax and linen industries have made most advance in the Jaroslaw and Moscow governments, while in that of St. Petersburg they do not seem to thrive so well. The linen manufacture is almost entirely in the hands of the Russians, which is rather remarkable, seeing that so many branches of industry are to a great ex-

tent followed by foreigners. The government of Jaroslaw is evidently the most advanced as regards the system of linen manufacture, since the value of production, per workman, in its flax-spinning mills is about £205; in the linen mills, £120; while, for instance, the average production of each mill-hand in the government of Wlademir is only £59 in the spinning, and about £31 in the linen mills. The mills of Baron Streglitz, near Narva, sell best sailcloth from 30s. to 54s. per piece; ravensduck from 22s. to 26s. per piece. Those made from the Pskow and Livonian flax are remarkable for their strength and wearing qualities. The Norok mills, in the Jaroslaw government, sell yarns spun from clean flax, Nos. 18–100, at from 32s. to 68s. per pud of 36 lb. avoir.; yarn from waste flax, Nos. 14–40, from 21s. to 49s. per pud; double-thread, Nos. 18–100, from 42s. to 85s. per pud; and coarse (Flemish) linen, of first-rate quality, at 26s. 8d. per piece. On the whole, it may be said of the Russian linen manufacture, that it has at length reached a point at which it is equal, so far as regards the middling and coarser qualities, not only to sustain foreign competition at home, but also to take part in foreign markets.

FLAX SPINNING ESTABLISHMENTS.

Governments.	No of Mills.	No. of Hands.	Value of Production.
			£
Witebsk........	1	....	....
Wladimir	2	531	47,700
Wologda	1	500	42,000
Kostroma	4	3,703	321,000
Livonia	2	317	27,600
Riazan	1	100	7,000
Tver	1	550	74,700
Jaroslaw	2	1,800	122,600
Total	14	8,601	642,600

LINEN WEAVING ESTABLISHMENTS.

Governments.	No. of Mills.	No. of Hands.	Value of Production.
			£
Witebsk........	1	80	1,300
Wladimir	29	10,550	290,000
Wologda	4	675	28,000
Grodno	1	21	1,200
Kaluga	3	131	5,200
Kostroma	16	1,437	122,300
Moscow........	1	60	2,900
St. Petersburg ..	3	1,930	132,400
Tver	2	25	500
Jaroslaw	5	1,890	51,000
Tchernigow ..?.	24	292	5,900
Finland	1	745	70,000
Poland	5	1,185	80,000
Total for Russia	94	19,100	790,000

Hemp is chiefly grown in the central governments, viz., Orel, Kursk, Tchernegoff, Smolensk, Kaluga; Tula, Mohilew, and Riazan. The yearly production in 1867 was about 6,000,000 puds (216,000,000 lb. avoir.), valued at about £3,333,000. The exports of Russian hemp do not show an equal rate of increase to those of flax. The following were the exports in 1861, 1868, and 1870:—

EXPORTS OF HEMP AND TOW.

	1861. puds.	1868. puds.	1870. puds.
Hemp..	2,977,399 ..	2,699,746 ..	3,285,623
Tow ..	56,260 ..	50,302 ..	76,300
Total ..	3,032,659 ..	2,750,048 ..	3,361,323

There is also a considerable export of hemp yarn. Of rope, &c., there is a diminution in the exports, which fell gradually from 329,127 puds in 1861 to 303,024 puds in 1868, and 268,625 puds in 1870. The hemp spinning works are chiefly in Tver and Orel. According to the Minister of Finance, they were 19 in number, employing 2,126 hands and producing a value of about £177,000 per annum. The rope and cord mills are given as 142, employing 3,219 hands, and their yearly produce valued at £437,000. These rope works are principally situated in the St. Petersburg and Cherson governments. At one of the largest and oldest establishments of the kind in the empire, the prices of tarred rope average 13s. 4d. per pud; bleached ditto, 14s. 8d. per pud. *Cotton.* The consumption is enormous. Of the seventy-seven millions odd of inhabitants which the empire contains, from 50,000,000 to 60,000,000, at least, use cotton cloth as their chief material for clothing. The first cotton mill was built in 1798, at Alexandrowsk, near St. Petersburg, by the order of the Emperor Paul. The tariff of 1822 gave a great stimulus to the cotton manufacturers. Averse to allow Russia to depend entirely upon foreign manufacture for the principal want of its people, the Imperial Government has protected, by duties which in most cases are virtually prohibitive, the native manufacturers. Under this forcing system, the cotton industry in the empire has thriven amazingly during the last thirty years. Much foreign capital has in consequence been attracted to this country, and a large number of workmen are giving during the whole year, under the comparative discipline of the mills, a greater amount of useful labour than, under other circumstances, they would have bestowed on their agricultural pursuits. Russia is not wholly dependent on foreign supply for the raw article. Districts of the Caucasus have been found by experience to be well suited for cotton growing; plantations have been established near Kutais and Baku, with fair success. Cotton is grown in Russian Turkestan as far north as Chemkend, and there is no reason why its cultivation should not be extended farther north; indeed, the climate an[illegible] this province, and the adjoining [illegible] appear excellent in this respect. The best cotton in the Russian Asiatic possessions comes from near Tashkend, where American varieties have been tried with success. Superior both to Tashkend and Khojend cottons are those of Bokhara, where more care appears to be taken with the plants, which produce cotton little inferior to some American kinds. The largest crops are said to be obtained in the Khanate of Khiva. In the Khanate of Khokand much land is devoted to cotton, and the crops are rich and of good quality. There is no lack of means of raising the raw article. It has been calculated that the Khanates of Central Asia, even in the present state of their agricultural knowledge, might produce yearly about 1,000,000 cwt. of raw cotton; of which Bokhara could grow 650,000 cwt., Khiva 260,000 cwt., Khokand 100,000 cwt., and the semi-independent provinces of Afghanistan, on the Oxus, the remaining 90,000 cwt. The insufficient cleanness of the Bokhara cotton detracts greatly from its value. A pud (36 lb.) of Bokhara cotton costs at Tashkend from 8*s.* to 18*s.*; in Khokand, however, its price is 2*s.* to 3*s.*; and in Bokhara, as is natural, much cheaper still. Indian cotton has to some extent been used in Moscow for cotton spinning, and there can be no doubt that the Suez Canal will have a sensible effect in continuing this supply. The machinery of many of the Moscow mills was altered, even before the outbreak of the war in America, so as to be suitable for the working up of the short-stapled Asiatic cottons. In these mills the general mixture is two-fifths American with three-fifths Asiatic cotton. The Bokharan, being much dirtier and fuller of seeds than even the Indian cotton, must be sold at Moscow at 13*s.* or 14*s.* per pud, to be as advantageous as Indian at £1 2*s.* per pud. Now Bokhara cotton, on account of the long land-carriage, cannot be brought to Moscow, to be sold with profit, for the former prices. The following were the values of the imports of raw Asiatic cottons from 1857 to 1867:—

IMPORTS OF RAW ASIATIC COTTON.

1857	£110,000	1863	£500,000
1858	114,000	1864	1,223,000
1859	77,000	1865	621,000
1860	170,000	1866	773,000
1861	90,000	1867	900,000
1862	290,000		

Notwithstanding the impulse given by the American war to the importation of Asiatic cotton, the imports of raw American cotton have also increased from 2,491,387 puds in 1861, to 2,973,634 puds in 1869—an advance in nine years of 482,257 puds. Of *foreign white and coloured cotton yarns*, the increase has been 46,410 in nine years,—namely, from Sw: [illegible],564 puds in 1861, to 164,974 in 1869, and Port. 96 in 1870. The imports of foreign yarns Pol. A. were 139,746 puds; the great augmen- cious sto. the subsequent years is owing to the deep red [illegible] the tariff (January 1, 1869) from the carbuncle of a 10*s.* 5*d.* per pud on white cotton yarn to 8*s.* 8*d.*, and on coloured yarn from 14*s.* 8*d.* to 11*s.* 4*d.* The imports of manufactured cotton goods were 51,144 puds in 1868, 75,083 in 1869, and 82,404 in 1870. The *chief seats of Cotton Manufacture* are in the central governments, the Baltic provinces being the most northern; Riazan and Kaluga, the most southern of the governments in which this industry is carried on to any extent. Moscow and Wladimir are the most important centres of the trade. The total number of cotton-spinning mills in the empire is 67, employing 43,778 hands, and producing £7,107,300 worth of yarn. The total number of cotton-weaving establishments is 1,660, employing 65,558 hands, and producing £4,640,066 worth of cloth. *Calico printing mills*, 152; employing 23,018 hands, and producing £3,820,000 worth of prints. To these may be added 359 establishments for dyeing and bleaching cotton, whose earnings average about £600,000 a-year. The red Turkish dye, from the excellent madder of the Caucasus, is largely used. *Wool.* With the exception of its northern government, where the cold climate, but principally the marshy nature of the soil, is unsuitable, Russia is well adapted for sheep. The number, excluding Poland, is put down at 44,170,000, of which 11,656,000 are of the fine-wooled (Merino) breed, the rest of ordinary kinds. The most remarkable native breed is that of the Romanow sheep, peculiar to the government of Jaroslaw, which is celebrated for its glossy, dark-grey fleece—used only for furs—and for its great prolificness. It is said, however, like the black Bokhara sheep, to lose the above qualities when removed from its native district. There has been an increase in the number of sheep reared in Russia, notably of the Merinos; the competition however of the Australian and South American wools has been much felt, and by diminishing the profits of what was once a most lucrative branch of farming, has given a serious check to its rapid development. The yearly wool production of Russia is roughly estimated at from 108,000,000 to 120,000,000 lb. avoir., of which about two-thirds are worked up in the country. The exports of Russian wool over the European frontiers have been falling off gradually, and year by year from more than 36,000,000 lb., in 1861, to 33,000,000 lb., in 1870. The imports of foreign wool, on the other hand, 576,000 lb. in 1861, were more than 3,376,000 lb. in 1870. Again, the imports of carded or combed and coloured wools (half manufactured), which were about 3,440,000 lb. in 1861, amounted in 1870 to 9,205,000 lb. It is clear from the above that as regards the raw article there has been no very great increase of production in Russia; but it should be explained as regards the weight of the wool exports that the wool now sent abroad is generally washed, and, consequently, weighs less than the uncleansed wool formerly exported. Still the exports to Europe have also fallen off in value (this in a great measure is owing to the lowering of the price of wool), for they were only £1,150,000 in 1867, against £2,220,000 in 1861, and this diminution has continued since 1867. On the other hand, the exports to Asia have largely increased, viz., from £5,000 worth of raw wool and £22,000 of woollen goods in 1857, to £53,000 worth of wool and £404,000 worth of woollens. The government of Moscow possesses by far the largest amount of woollen mills. Livonia, St. Petersburg, Tchernigow, Simbirsk, and Grodno contribute also to some extent to the general total. This industry is scattered more or less throughout the empire. The total number of wool spinning-mills in 1867 was 30, employing 3,217 hands; value of production, £438,800. In 1870 the production was estimated at £700,000. *Worsted weaving mills.* In 1870 it was estimated that this branch of production was of a value of upwards of £3,000,000. The largest stuff manufactory in Russia is at Pusckina, near Moscow. The prices for thibets, cashmeres, reps, grosgrains, brillantines, poplins, crapes, and lustres vary from 11*d.* to 2*s.* 5*d.* per yard. Cheap printed shawls (imitating Turkish in size, shape, and pattern) are manufactured largely at Moscow, at prices from 5*s.* 4*d.* to £1. Progress has been made in this branch of manufacture, but much remains to be learnt yet, especially in cleanliness of spinning and taste of design, before the Russians can equal the western worsted stuffs. *Cloth manufactories* are 432 in number, employing 66,319 hands; value of production, £4,858,700. The want of progress in this branch of industry in some measure arises from the greater part of the Russian cloth manufactories being owned by persons who from want of capital have not the power of largely extending their operations. The soldiers' cloth and coarse cloth are generally good. The best are made in the Moscow government, in Simbirsk, and at Dorpat. The chief inferiority of the Russian to English, Belgian, or French cloths consists especially in its relatively great weight. The exports of Russian cloth to Europe first began in 1861, with a value of less than £2,000; in five years afterwards the yearly value amounted to £40,000. *Silk.* Since 1710, when some Americans, by order of Peter the Great, first acclimatized them, silkworms have been reared in the south of Russia, and even as far north as Moscow. The more recently acquired provinces, however, produce the best cocoons. The Tashkend and Turkestan silk, from its brilliancy and strength, is becoming daily more prised, and there is perhaps no country in the world better suited to silkworms than the Caucasus. Of the raw production of the Caucasus (from 1,000,000 lb. to 1,250,000 lb. avoir. per annum), formerly two-thirds were sent abroad, chiefly to Italy and France; at present the largest part is worked up in the Russian dominions. The Menonites and German colonists in the south, principally in the Ekaterinoslaw and Taurid governments, show much aptitude for the silkworm culture. On the Molotchna the Menonites grow large quantities of mulberry-trees. It is a general rule among them that each should plant or own at least 1¼ acre of woodland, of which not less than one-half should be planted with mulberry-trees. Besides the Menonite silkworm plantations, there are silkworms in the governments of Kieff, Kharkow, Moscow, and Warsaw. The total raw silk production of Russia has been roughly estimated at about 1,000,000 lb., of a value of about £600,000. In 1870 there were 20,000 hands employed in the silk manufactories, of which the produce was more than £1,160,000 in value. The prices of raw silks vary considerably at Moscow. As to the manufactured goods, Russian silk atlas is sold at 5*s.* 10*d.* per yard; half-silk atlas, from 3*s.* 3*d.* to 4*s.* 5*d.* per yard. It is in the fabrication of the cheaper and thinner silks that the Moscow manufacturers excel. "Kanaus," an essentially Russian and Caucasian pure silk manufacture, generally striped in pattern, is sold at from 3*s.* 5*d.* to 4*s.* 5*d.*; an excellent article for the price Russian atlas is certainly inferior to foreign; but on the whole Russian silks are stronger and better than the German and Austrian. Some, indeed, are very little inferior to those of Lyons. In 1870, Russia imported 714,597 lb. avoir. of spun silk, and 297,216 lb. of silk stuffs. Her export of raw silk was about 144,000 lb. *The Russians as factory hands,* being quick to learn, and naturally fine fingered, show considerable aptitude for factory labour, and they are especially good mechanics; but they have little pride in their work, and are careless, often causing great losses in the mills. *As a market for foreign textile fabrics,* Russia will probably, and for a long period, continue to be a consumer of the finer descriptions of manufactures from abroad, but it is scarcely likely that the lowest priced classes of foreign textile goods will ever to any large extent be imported. *Money.* The silver rouble, average rate of exchange, 3*s.* 2*d.* *Weights and measures.* The berkowetz (or shippund)=361 lb. avoir.; pud=36·1 lb.; chetverk=5·77 imp. bush.; oxhuft=48·72 imp. gall.; auker=8·12 imp. gall.; vedro=2·70 imp. gall.; arsheen=28 inches; dessiatine=2·691 English acres; ship last=2 tons; verste=1166⅔ yards.

RUSSIA LEATHER [Ger. *Juften*, Du. *Jucht*, *Jugt*, Da. *Ruslæder*, *Ryslæder*, *Juchter*, Sw. *Jufter*, *Juchter*, *Ryska buder*, Fr. *Cuir de Russie*, ou *de Roussi*, *Vache de Russie*, It. *Cuojo di Russia*, *Vacchette di Muscovia*, Sp. and Port. *Muscovia*, Rus. *Juft*, *Youft*, Pol. *Juchta*] is prepared from the hides of kine, and comes to us ready dressed from Russia. This is the leather which the Russians call *Youft* (in the plural *Youfti*), a word denoting that the Russian skins are usually assorted in couples. There are very few towns in Russia in which this species of leather is not prepared, but that which is manufactured at Jarosla
accounted the best. In foreign countrie
well in Europe as in Asia, the red leath

most esteemed, being admirably calculated for book-binding. In Russia, however, the black leather is in the greatest demand, for this obvious reason, that vast quantities of it are employed in the formation of boots and shoes.

RYE [Ger. *Rogken*, *Rocken*, Du. *Rog*, *Rogge*, Da. *Rug*, Sw. *Råg*, Fr. *Seigle*, It. *Segale*, *Segala*, Sp. *Centeno*, Port. *Senteio*, *Centeio*, Rus. *Rosch*, *Sel*, *Jar*, Pol. *Rex*, *Zito*, Lat. *Secale*]. The plant which produces this well-known and useful species of grain is a native of the island of Candia, and was introduced into England and the north of Europe many years ago. There are two varieties, the win.er and spring-rye. The winter-rye, which is larger than the spring-rye, is sown in autumn, at the same time with wheat. The spring-rye, which is sown along with the oats, usually ripens as soon as the winter-rye; but the grain produced being lighter, is seldom sown, except where the autumnal crop has failed. Rye is commonly used in making bread, either alone or mixed with wheat.

S

SABLE [Ger. *Zobel*, Du. *Sabel*, Da. *Zobel*, Sw. *Sabel*, Fr. *Zibelline*, *Marte-Zibelline*, It. *Zibellino*, Sp. *Cebellina*, *Marta-Cebellina*, Port. *Zebelina*, *Zibelina*, Rus. and Pol. *Sobol*, Lat. *Zibellina*, *Zobela*], an animal chiefly esteemed on account of its fur, which bears the same name. The most beautiful sable-skins have generally the worst tails; and, *vice versâ*, the worst skins have the best tails. There are sables as white as snow, but they are met with very rarely. Upon the islands in the North-eastern Sea, beyond Kamtschatka in Russia, the sables are very indifferent; but then they have the tails a quarter of a Russian ell long, streaked red and black. Hudson's Bay and Canada are the parts of North America which furnish us with sables, but those of the former are far superior to the latter. The colour of the North American skins is generally dark flaxen.

SAFFLOWER, or BASTARD SAFFRON [Ger. *Saflor*, Du. *Saffloer*, *Floers*, *Basterd*, *Saffraan*, Da. *Saffler*, *Uægte Saffran*, Sw. *Safflor*, *Oägt Saffran*, Fr. *Cartame*, *Saffran batard*, *Saffran d'Allemagne*, *Safranon*, It. *Zaffrone*, *Zafferano saracinesco*, Sicil. *Usfaru*, Sp. *Alazor*, *Azafran bastardo*, *Cartamo*, Port. *Açafroa*, *Azafroa*, *Cartamo*, *Fusaro*, Rus. *Polevoi*, *Prostoi schafran*, Pol. *Szafran polny*, *Krokus*, Lat. *Carthamus tinctorius*, *Saffranum*], is the florets of the flower of the *carthamus tinctorius*, a plant originally growing in Egypt and some of the warm parts of Europe, especially Spain, and also in the Levant, whence large quantities are annually imported into Great Britain. The good quality of this commodity is known by a bright colour of a saffron hue. Safflower contains two kinds of colouring matter; the one yellow, the other red. The first alone is soluble in water: its solution is always turbid: with re-agents it exhibits the appearances commonly observed in yellow colouring matter. Acids render it lighter; alkalis make it deeper, and more approaching to orange. Both produce a small portion of fawn-coloured precipitate, by means of which it becomes clearer.

SAFFRON [Ger. *Zaffran*, Du. *Saffraan*, Da. and Sw. *Saffran*, Fr. *Safran*, It. *Zafferano*, Sp. *Azafran*, Port. *Açafrao*, Rus. *Schafran*, Pol. *Szafran*, Lat. *Crocus*], a bulbous plant, of which there are two species, one blowing in spring and the other in autumn. The former is merely esteemed on account of the beauty of its flowers. The latter is in blossom earlier than the green leaves appear, which remain during winter, and the flowers contain those small threads or filaments used for sundry purposes. There are three varieties of this species of saffron to be met with in the shops, two of which are brought from abroad; the other is the produce of our own country. This last is greatly superior to the former, from which it may be distinguished by its blades being rather broader. When in perfection it is of a fiery orange-red colour, and yields a deep yellowish tincture. It should be chosen fresh, not above a year old, in close cakes, neither dry nor yet very moist, tough and firm in tearing, of the same colour within as without, and of a strong, acrid, diffusive smell.

SAGO [Ger. *Sago*, Du. *Sagoe*, Da. *Sago*, *Sagogryn*, Sw. *Sagogryn*, Fr. *Sagou*, It. Sp. and Port. *Sago*]. This is the produce of an oriental tree, the *cycas circinalis*, which has generally been considered as belonging to the palms, though some have classed it as a fern. According to Petit-Thouars, however, it forms a class distinct from both. The pith of a tree of a middle age or growth is beaten with water, and made into cakes, which are used by the Indians as bread. They likewise put the powder into a funnel, and wash it with water over a hair-sieve, which allows only the finer part to pass through the water. The water, on standing, deposits the fecula, which, being passed through perforated copper-plates, is formed into the grains called sago. The sago-tree grows spontaneously, and in great abundance, in several parts of India, but particularly in the Moluccas and on the coast of Malabar.

SALT [Fr. *Sel*, Ger. *Salz*], well known as a seasoner and preserver of food. Two kinds are distinguished, Rock and Sea Salt. When found native in immense masses, which only requires to be dug and reduced to powder, it is termed rock salt, and when obtained by the evaporation of sea water, common or sea salt; *sp. gr.* 2·125. Salt abounds in various parts of the world. In England, the beds of rock and brine springs situated in Cheshire and Worcestershire are the most important sources of supply, not only for home consumption, but for exportation to Russia, Prussia, Belgium, the United States, and other countries.

SALVAGE. Salvage is an allowance made for saving a ship, or goods, or both, from the dangers of the seas, fire, pirates, or enemies.

SAMPLE, a small quantity of an article exhibited at a public or private sale as a specimen of the commodity. Sugars, wool, spirits, wine, coffee, and nearly every species of merchandise, is sold by sample. If an article is not, on an average, equal at least to the sample whereby it is sold, the buyer may recall his contract, and return the article upon the hands of the seller.

SANDWICH or **HAWAII ISLANDS,** a group in the North Pacific, between *Lat.* 11° 54′ and 22° 15′ N., and *Long.* 199° 36′ and 205° 6′ E. *Pop.* about 80,000. The productions are, wheat, raised mostly on the uplands, and coffee, sugar, cotton, tobacco, cacao, arrowroot, mulberries, guano, &c. The chief port is Honolulu. It affords safe anchorage, and great facilities for vessels to discharge cargo. The commerce of this group is large, and steadily increasing; its annual value being about £16,000. *Imports.* Manufactured goods, sheathing copper, ships' stores, provisions and colonial produce. *Exports.* Sugar, salt, molasses, arrowroot, &c.

SAPAN [Ger. *Sapanholz, Japanholz,* Du. *Sapanhout,* Da. *Sapanholt,* Sw. *Sappan,* Fr. *Bois de Sapan,* It. *Legno di Sapan,* Sp., and Port. *Sapan,* Lat. *Lignum Sappan*], a species of wood, similar in every respect to the Brazil-wood, and employed for the same purposes. The tree which produces it is found in South America, Japan, and Cochin-China. The Sapan and the cypress-tree are more commonly met with in Japan than any others, and are employed not only in the construction of edifices and ships, but in the formation of cabinets, chests, boxes, &c. The branches are used as fuel.

SAPPHIRE [Ger. *Sapphir.* Du. *Saffiersteen,* Da. Sw. and Fr. *Saphir,* It. *Zaffiro,* Sp. *Safiro, Safir,* Port. *Safira,* Rus. *Jachont,* Pol. *Szafir,* Lat. *Sapphirus*], a genus of precious stone, of a blue colour, and the hardest of all except the ruby and diamond. They are found in the same countries with the ruby; also in Bohemia, Alsace, Siberia, and Auvergne. Some are found half green and red, and are foliated like the ruby. The fine hard sapphires, called by the jewellers oriental, are of the same nature with the ruby and topaz, excepting the mere circumstance of colour.

SARDINES, or **SARDINIAS** [Ger. *Sardellen,* Du. *Sardynen,* Da. and Sw. *Sardeller,* Fr. *Sardines,* It. *Sardine,* Sp. *Sardinas,* Port. *Sardinhas,* Rus. *Sardin,* Pol. *Sardely,* Lat. *Sardinae*], are taken in considerable quantities on our coasts and are exceedingly plentiful on the coasts of Algarve in Portugal, Cadiz and Granada in Spain, and along all the shores of Italy. The small sardines, caught on the coast of Provence in France, are esteemed by epicures as being superior to all others of this species.

SATIN [Ger. *Atlass,* Du. *Atlas,* Da. *Atlas, Atlask,* Sw. *Atlask,* Fr. *Satin,* It. *Raso,* Sp. *Raso liso,* Port. *Setim,* Rus. *Atlass,* Pol. *Atlas*], a soft, closely woven silk, with a glossy surface, usually employed for women's wear. In the manufacture of other silken stuffs, such, for example, as taffety, the mode is to raise alternately each half of the warp, in order to form the body of the stuff. On the contrary, in weaving satin, the workmen only raise the fifth or the eighth part of the warp; by these means the woof is hidden beneath the warp, which, presenting an even, close, and smooth surface, is the more capable of reflecting the rays of light; and thus it is that satin acquires that lustre and brilliancy which distinguish it from most other kinds of silks.

SAY, or **SAYE,** a kind of serge or woollen stuff, much used abroad for linings, and by the religious of some orders for shirts; with us it is employed as aprons, by several descriptions of artificers, being usually dyed green.

SEAL [Ger. *Seehund, Robbe,* Du. *Zeehond,* Da. *Sælhund, Sæl,* Sw. *Själ,* Fr. *Phoque, Veau marin,* It. *Foca, Vitello marino,* Sp. *Foca, Becerro marino,* Port. *Phoca, Vitello* ou *bezerro marinho,* Rus. *Tsulen, Nerpa,* Pol. *Ciele morskie,* Lat. *Phoca, Vitulus marinus*], an animal of the amphibious kind, a native of the European seas, and found about all the coast of the northern hemisphere, even extending to the southern polar It also inhabits some fresh-water those of Baikal, Oren, &c. Seals rally very fat, and are hunted in th regions for the sake of their oil, forms a considerable article of commerce. The bottle-nosed seal is usually so excessively fat as to resemble a skin of oil, the tremulous motion of the blubber being plainly perceivable beneath the skin. A single animal of this species has been known to yield a butt of oil. The skin of the seal yields a very fine species of fur.

SEALING-WAX [Ger. *Siegellack,* Du. *Brieflak, Zegellak,* Da. *Seiglak,* Sw. *Sigillvax,* Fr. *Cire d'Espagne, Cire à cacheter,* It. *Cera Lacca, Cera di Spagna,* Sp. and Port. *Lacre,* Rus. *Surgutsch,* Pol. *Lak*] is the wax used for sealing letters, legal instruments, &c. It is a composition of gum-lac, melted and incorporated with resin, and afterwards coloured with some pigment, as vermilion, verditer, ivory-black, &c.

SENA, or **SENNA** [Ger. *Sennesblätter,* Du. *Senne,* Da. *Sennesblade,* Sw. *Sennesblader,* Fr. *Séné,* It. *Sena,* Sp. *Sen, Sena,* Port. *Sene, Senna,* Rus. *Sanalnie listi,* Pol. *Senes,* Lat. *Senna, Sennae folia*], the leaf of the *cassia senna* Lin. This is a shrubby plant cultivated in Persia, Syria, and Arabia, whence the leaves are brought, dried, and picked from the stalks, to Alexandria in Egypt, and thence imported into Europe. They are of an oblong figure, sharp-pointed at the ends, about a quarter of an inch broad, and not a full inch in length, of a lively yellowish-green colour, a faint, not very disagreeable smell, and a nauseous taste. Some inferior sorts are brought from Tripoli and other places. These may easily be distinguished by their being either narrower, longer, and sharper pointed, or larger, broader, and round-pointed, with small prominent veins, or large and obtuse, of a fresh, green colour, without any yellow cast. The Arabians sell their senna at Mecca and Jidda, whence it passes by way of Suez and Kahira to Alexandria.

Serge [Ger. *Sarsche*, Du. *Sargie*, Da. *Sars*, *Sarge*, *Sirts*, Sw. *Sars*, Fr. *Sarge*, *Serge*, It. *Sargia*, Sp. *Sarga*, Port. *Sarja*, Rus. *Ssarska*, Pol. *Szarsza*], a woollen stuff manufactured in a loom, of which there are various kinds, denominated either from their different qualities or from the places where they are wrought. In the manufacture of serges, the largest wool is chosen for the warp, and the shortest for the woof.

Shammy, or Chamois Leather [Ger. *Sämischleder*, Du. *Zeem*, *Zeemletr*, Da. *Semslæder*, Sw. *Sämskläder*, Fr. *Chamois*, It. *Camoscio*, Sp. *Gamioza*, Port. *Camurça*, Rus. *Samschuti*, *Koshi*, Pol. *Zamesz*, *Lesz*], a kind of leather, dressed either in oil or tanned, and much esteemed for its softness, pliancy, and being capable of bearing soap without hurt. The real shammy is prepared of the skin of the chamois-goat. The true chamois leather is counterfeited with common goat, kid, and even sheep-skin, the practice of which makes a particular profession called by the French *chamoisure*.

Shawls [Fr. *Chals*, *Chales*, Ger. *Schalen*], well-known articles of dress made of wool, silk, or more commonly of silk and wool mixed. The finest are those made of cashmere. The chief seats of the shawl manufacture in the United Kingdom are Paisley and Norwich. French shawls are highly esteemed.

Sheep [Fr. *Brebis*, *Mouton*, Ger. *Schafe*], a well-known ruminating animal. British sheep are usually classed into short-woolled and long-woolled, the leading and best bred of the former being the South Down, and of the latter the New Leicester. The fleece of the former is short and fine, and weighs 3 to 4 lb., and that of the latter averages from 6 to 7 lb. Of other breeds, the chief short wools are the Black-faced Scots, the Cheviots, the Dorset, the Hereford, the Wiltshire; and the chief long-wools, the Teeswater, the Lincoln, and the Romney Marsh.

Sherry, a well-known wine, of a deep or light amber colour. When good it has a fine aromatic odour; its taste is warm, and with some degree of the agreeable bitterness of the peach kernel. It is principally produced in the vicinity of Xeres, in Spain.

Ship, a general name for all large vessels, particularly those equipped with three masts and a bowsprit; the masts being composed of a lower-mast, topmast, and topgallantmast, each of these being provided with yards, sails, &c.

Shirting is a description of unbleached calico, made in Lancashire, from American and Indian cotton, unless in the very fine qualities, when Egyptian takes the place of the latter. The piece is 36 yards long, and is from 36 to 45 inches broad, according to the weight of material required. In the process of manufacture the yarn made from the American staple, which is the strongest, forms the warp or foundation of the web—the threads passing from end to end of the piece—and the Indian the weft or the threads running across. Before the warp is placed on the loom, it is carefully sized and then dried, so that the yarn may be separated and stiffened sufficiently to enable the weavers to pass it through the reed, and afterwards what is called the treddles. The former preserves the width of the piece, and the latter causes the warp to rise and fall while the weft is passing through. The weft is contained in a long narrow box called a shuttle, and is kept from becoming too thick or too thin by means of a wooden box, which sways to and fro in front of the operative, when the loom is in motion. When woven, a good piece should be free from specks, and be of a uniform colour. The selvages or borders should be entirely free from small pricks, and at each end there should be threads of red run across to indicate that the piece is whole. It ought also to be quite free from damp and unpleasant smells, for if packed otherwise, mildew soon appears, and damages the material. It is in this description of calico that the chief business is done in Lancashire, as all over the East it is extensively used. The particular weight in demand is 7 lb. shirting, which sells abroad for about 35 per cent. above its cost, and taking the charges of freight, shipment, &c. at 25 per cent., that would leave a reasonable margin of profit.

Silk [Fr. *Soie*, Ger. *Seide*], a very soft, fine, bright thread, the work of an insect called the bombyx, or the silk-worm. Silk occurs in various forms. Cocoons, knibs, or husks are the balls as formed by the worm. Raw silk, the state when simply wound off the cocoons into skeins or banks, is the thread composed of several fibres united by their natural gum. Waste silk is that part which is first wound off cocoons in the operation of reeling, and such cocoons as, being eaten through by the worm, cannot be wound off the reel, but are afterwards carded and spun. Silk husbandry is extensively prosecuted in Italy, France, China, Persia, Siam, and India. Silk is imported into this country chiefly from Italy and China. It is, next to tea, the great staple of China. For many years there was a prohibition on the importation of foreign silks into this country; in 1824 this prohibition ceased, and the silk manufacture made rapid progress. In 1845 the duties upon raw and thrown silk were totally abolished, and the 30 per cent. *ad valorem* duty on foreign silks was reduced to 15 per cent.

QUANTITIES OF SILK EXPORTED FROM THE PORTS OF SHANGHAE AND CANTON TO FOREIGN COUNTRIES AND COAST PORTS IN THE YEAR ENDED 31ST DEC., 1868.

Ports from which Exported.	Description of Silk.	COUNTRIES TO WHICH EXPORTED.				
		Gt. Britain.	Hong Kong.	France.	America.	Other Countries.
		lb.	lb.	lb	lb.	lb.
Shanghae	Raw	3,878,679	58,387	1,110,018	89,642	75,278
		bales 1,809	bales 10,279	bales 1,195	bales 4	bales 785
	Raw wild	666	...	...	...	133
	Thrown	36,841	...	21,147	...	399
	Refuse	316,673	...	17,157	399	...
		bales 149	bales 112	bales 56		
	Cocoons	19,551	—	798	...	...
Canton	Raw	59,318	1,438,661	...	43,757	...
	Raw wild	...	869,288	...	...	...
	Thrown	...	12,103	...	...	...
	Refuse	236,474	58,786	...	9,044	...
	Cocoons	49,742	167,048	...	...	...

SILVER [Ger. *Silber*, Du. *Zilver*, Da. *Solv*, Sw. *Silfver*, Fr. *Argent*, It. *Argenta*, Sp. *Plata*, Port. *Prata*, Rus. *Serebro*, Pol. *Srebro*, Lat. *Argentum*], is a metal of a fine white colour, without either taste or smell; and in point of brilliancy perhaps inferior to none of the metallic bodies, if we except polished steel. Its hardness is 7. When melted, its specific gravity is 10·478; when hammered, 10·609. In malleability, it is inferior to none of the metals, if we except gold, and perhaps also platinum. It may be beaten out into leaves only 1-160,000th of an inch thick. Its ductility is equally remarkable: it may be drawn out into wire much finer than a human hair; so fine, indeed, that a single grain of silver may be extended about 400 feet in length. Its tenacity is such that a wire of silver 0·078 inch in diameter is capable of supporting a weight of 187·13 lb. avoir. without breaking.

SINGAPORE. This town consists of an island off the S. extremity of the Malay peninsula, separated from the mainland by a strait, which in one part is only a quarter of a mile. It was acquired by purchase in 1819, and in 1826 was formed into one government with Penang and Malacca. Singapore is valuable principally as a depot for the British and Indian trade with the islands of the Eastern seas. *Exports*. Teak, tin, pepper, gutta percha, sago, rice, coffee, sugar, &c., and *imports*, cotton, woollens, arms, iron, copper, linens, &c. The trade has advanced from £2,610,440 in 1825-6 to £12,378,319 in 1868. The extremely rapid progress, especially during the first 40 years of its existence, that is to say up to 1859, is a noteworthy feature; since then it has hardly maintained the same steady advance, though in 1865-6 it reached the large amount of 14½ millions. There are no duties on imports or exports. The only charge on shipping is a *light* due of about 3 cents per ton. *Money*. Accounts are stated in dollars, divided into 100 cents; also in rupees (2s. per rupee); annas (1/16), and pies (1/12). *Measures and weights*. Corid, cloth measure = 18 imp. inches; the gantang of 2 bamboos, by which liquids, grain, and fruit are often sold, = 1¼ Eng. gallons, and 1·04 imp. gallon. The common weight is the Chinese picul of 100 catties, or 1,600 teels = 133·3 lb. avoir.

SNUFF [Ger. *Schnupftabac*, Du. *Snuiftabak*, Da. and Sw. *Snus*, *Snustobak*, Fr. *Tabac en poudre*, It. *Tabacco da naso*, Sp. *Tabaco de polvo*, Port. *Tabaco em po*, Rus. *Nosowoi tabak*, Pol. *Prossek*], a powder chiefly made of tobacco, the use of which is so universally known as to need no description here. Large quantities of snuff are made both in Scotland and Ireland, a great part of which is brought into this country for sale. The Irish snuff is prepared by toasting the tobacco previously to the grinding, and not only the leaves but the *stalks* of the plant are ground up in the course of the process. Hence it is that the Irish snuff has obtained the appellation of stalk.

SPAIN [Anc. *Iberia*, Sp. *España*] forms with Portugal the Pyrenean or Iberian peninsula. It lies between *Lat.* 36° and 43° 48′ N., and *Long.* 3° 20′ E., and 9° 10′ W. It is bounded N. by Bay of Biscay and France; W. by Portugal and the Atlantic; and S. and E. by the Straits of Gibraltar and the Mediterranean. *Area*, 182,758 sq. miles. *Pop.* 16,301,851. *Cap.* Madrid. *Principal towns and pop.* Barcelona, 252,015; Seville, 152,000; Valentia, 145,512; Malaga, 113,150; Murcia, 100,446; Granada, 100,678; Saragossa, 82,189; Cadiz, 71,914; Valladolid, 50,017. *Colonial Possessions.* Balearic Islands, Canary Islands, Cuba, Porto Rico, Phillipine Islands, the Presidios (Ceuta, Pennon de Velezotlhucemas, and Melilla on the North Coast of Morocco). *Mineral productions of the Provinces.* The extension of railway communication in the interior is necessary for the further development of the mining produce, which ought to form a most important source of wealth. The produce amounts to about 1,341,000 tons, and is divided among the different provinces as follows:— *Iron.* Almeria, Guipuscoa, Leon, Logrono, [illegible] laga, Murcia, Novarra, Oviedo, Santander (29,000), Sevilla, Toledo, Vizcaya. *Lead.* Almerio, Granada, Iaen, and Murchia, the last producing over 2,000,000 metrical quintals. *Silver Lead.* Almeria and Murcia. *Silver.* Guadalara. *Copper.* Huelva and Seville. *Tin.* Orense, Pontevedra, and Zamora. *Zinc.* Almeria Santander (34,119 tons). *Quicksilver.* Audad, Real, Oviedo. *Cobalt.* Oviedo. *Manganese.* Huelva. *Soda.* Burgos, Madrid. *Alum.* Murcia. *Sulphur.* Murcia. *Coal.* Burgos, Cordova, Gerona, Oviedo (307,396 tons), Palencia, Seville. *Lignite.* Alava, Alicante, Balearic Islands, Barcelona, Gerona, Guipuzcoa, Santander. *Asphaltum.* Alava and Soria. *Agriculture.* Spain is essentually an agricultural country, and is consequently in a great measure dependent upon the produce of the soil. The superficies of the continental portion of the kingdom contains 494,946 square kilometres, and three-fourths of the population of this surface are employed in some species of rural industry. Such being the case, the state of the population is of vital importance to the prosperity of the country. At the beginning of the century the population, in round numbers, was 10,000,000, and it is now near 16,000,000. The effect of this increase has been that Spain produces, when at peace within herself, 66,000,000 hectolitres of grain, instead of only 38,000,000. The great corn-growing provinces are the Castilian, and they contain, perhaps, some of the finest districts in the world, the returns not only being large, but the quality extraordinarily good. The Spanish farmer has, however, great disadvantages to contend with. The want of internal communication in many districts is such that is impossible to bring the produce to a remunerative market, and the consequence is that in some provinces, when the harvest is plentiful, large quantities of grain are wasted, of which even the neighbouring ones are in actual want. The mass of the produce of the country cannot be brought to the great lines of railway at present, and until greater facilities are afforded for doing so, the progress of the agriculturist must be seriously retarded. The produce of the province of Madrid proper embraces wheat, barley, oats, rye, peas (garbanzos), haricot beans, potatoes, turnips, all kinds of garden vegetables, fruit of all kinds, fresh and preserved; hemp, flax, coal, wood, wine, vinegar, &c., and esparto grass. The wealth of the provinces, however, consists in live stock, the breeding and tending of which forms the sole occupation of the population. *Live stock in Spain.* Cattle, 1,380,861; horses, 268,248; mules, 415,978; sheep, 13,794,959; asses, 491,690; pigs, 1,013,389. *Commerce.* The principal article of *export* is wine, the value of which to the United Kingdom, in 1870, was £1,939,776, representing 1,739,075 galls. The value was £2,348,714, in 1869; £2,344,889, in 1868; £2,229,101, in 1867; £1,939,675, in 1866; and £1,539,047, in 1865. The other exports are metals, coined silver, oil, dried fruits, flour, minerals, corks, an grain. The *Chief British Imports* are linen an linen yarns; in 1870, the value was £734.536 iron, wrought and unwrought, value £300,841 and coals, value £304,116. The others ar woollen and cotton goods, silks, stuffs, fish, cocoa, coal and spirits.

		Exports from Spain to Great Britain.		Imports of Britis Home Produce into Spain.
1866	....	£5,553,132	....	£2,336,903
1867	....	6,088,318	....	2,237,062
1868	....	6,591,021	....	2,208,891
1869	....	6,346,741	....	2,204,115
1870	....	6,067,018	....	2,513,177

Industries. Cotton manufacture. The chi interest in this manufacture is of Cataloni which employed 100,000 people, 1,000,0 spinning machines before the recent distu bances broke out. With the exception foundries and refining establishments in th mining districts, and a few china and crocke manufactures, there is no other branch national industry worth mentioning. M Madoz, in his work upon Spain, observes th "In former times the manufacturing industr of the provinces of Madrid, Avila, Segovi Toledo and Guadalajara employed thousan of hands." Toledo possessed numbers needle manufactories, and more than 600 ca makers, besides innumerable woollen tissu works. It was famous for its silks, and esp cially the tissues of Talavera de la Rein were highly prized for their fine quality; an last, not least, it was renowned for the cel brated Toledo blades The fine cloth manu factories of the provinces of Segovia wer once held in high esteem, but for the la century and a half their value has declined, and now nothing is made but the coarser articles. More recently attention has been called to the fine woollen cloths of San Fernando, Guadalajara and Brichnega, which exceeded in quality the best English articles; but the expense of the manufacture, owing to the want of proper machinery, and the application of modern economical inventions, rendered competition impossible, and the establishments finally closed. At the present time nothing but coarse fabrics are made. The province of Avila was formerly the greatest manufacturing one of the whole kingdom, and its productions were held in the highest estimation in the principal markets, but it is at present reduced to making common woollen and linen articles for local consumption." *Ports. Barcelona*, the commercial capital, is in Catalonia, on the Mediterranean, *Lat.* 41° 22′ N., *Long.* 2° 10′ E. The harbour has 18 to 20 feet of water, but owing to a bar at its mouth large vessels are obliged to anchor in an exposed situation outside. *Imports*, raw cotton and colonial produce. *Exports*, silk goods, soap, fine ribbons, hats, laces, and steel. *Cadiz*, the capital of the province of Andalusia, is on the Atlantic, at the extremity of a peninsula of the Isle of Leon, *Lat.* 36° 31′ 41″ N.; *Long.* 6° 17′ 15″

W. Ships of large burden anchor three-quarters of a mile from the shore. Trade inconsiderable. *Alicant* is in Valencia, on the Mediterranean, *Lat.* 38° 20′ N.; *Long.* 0° 27′ W. *Imports*, coal, iron, machinery, and guano, raisins, oranges, wine, lead, and salt. Its pier is accessible only for small craft; large vessels remain outside. *Malaga*, on a bay in the Mediterranean, 65 miles E.N.E. *Gibraltar*. The harbour affords accommodation for about 450 ships, and may be entered in any wind. *Exports*, olive oil and various fruits, also lead and iron. *Imports*, salt fish, iron hoops, woollen, silk, and cotton fabrics, also colonial produce. *Palma*, capital of the island of Majorca, *Lat.* 39° 34′ N.; *Long.* 20° 38′ E. *Exports*, olive oil, wine, brandy, oranges and other fruits. Imperts, wheat, iron, hardware, provisions, and cotton goods. *Money*. The real = 100 centimes; average rate of exchange 100 = £ sterling; Peseta = 4 reales = 25 = £1.; Escudo = 10 reales = 10 = £1. *Weights and measures*. The kilogramme = 2.20 lb. avoir; litro = 0.22 imp. gall.; kilometro = 1·093 yards.; metre cube = 35·31 cubic feet; resma = English ream. COLONIES, &c. *Cuba*, the largest of the West India islands, and the most important of the colonial possessiens of Spain, situated beween *Lat.* 19° 50′ and 23° 9′; *Long.* 74° 8′, and 58′ W., 140 miles S.E. Flerida. Chief towns: Havana, Santiago, Matanzas, Santa Clara, Santa Maria, and Trinidad. *Pop.* 764,750 whites; 225,938 free negroes, and 368,550 slaves; total, 1,359,238. The cultivated lands are under sugar, coffee, tobacco, and gardens. *Philippine Islands*. (See under this heading.) *Porto Rico* is an island in the West Indies, between Hayti and the Virgin Islands, *Lat.* 17° 56′ to 18° 32′ N.; *Long.* 65° 40′ to 67° 20′ W. *Pop.* 615,574. Produce and exports, same as Cuba. *Balearic Islands*, a group in the Mediterranean, between *Lat.* 38° 40′ and 40° 5′ N.; *Long.* 1° 5′ E. consisting of Majorca, Minorca, Ivica, Formentara, and Cabrera. *Shipping*. The mercantile marine, in 1868, consisted of 1,446 sailing vessels, tonnage, 245,312, engaged in foreign trade, and 3,293 vessels, tonnage 101,724 engaged in the coasting trade; 101 steam vessels, tonnage 20,764.

SPERMACETI [Ger. *Wallrath*, Du. *Walschot*, Da. *Hvalrav*, Sw. *Vallratt*, *Valraf*, Fr. *Blanc de Baleine*, *Sperme de Baleine*, It. *Spermaceti*, Sp. *Esperma de Callena*, *Espermaceti*, *Blanco de Ballena*, Port. *Espermaceti*, Rus. *Spermazet*, Pol. *Spermaceti*, *Olbrod*, Lat. *Spermaceti*]. The brain of a species of whale, purified from the oily matter, affords a fat of a singular kind, known in the shops by the name of spermaceti. Good spermaceti is in fine white flakes, glossy, and semi-transparent, soft, and unctuous to the touch, yet dry and easily friable, in taste somewhat like butter, of a faint smell like that of tallow.

SPICES [Ger. *Specereyen*, Du. *Speceryen*, Da. *Specerie*, *Krydderie*, Sw. *Specerî*, *Kryddor*, Fr. *Epiceries*, *Epices*, It. *Spezj*, *Spezierie*, Sp. *Especias*, *Especerias*, Port. *Especiaria*, *Especiaria*, Rus. *Prânie korenja*, Pol. *Korzenie*]. Under this denomination are included all those species of vegetable production which are fragrant to the smell or pungent to the palate: such as cloves, ginger, nutmegs, allspice, &c., &c.

SOAP [Ger. *Seife*, Du. *Zeep*, Da. *Saebe*, Sw. *Tvål*, Fr. *Savon*, It. *Sapone*, Sp. *Jabon*, Port. *Sabão*, Rus. *Mulo*, Pol. *Mydlo*, Lat. *Sapo*], an unctuous kind of paste, made with oil or other kinds of fat, and an alkali, sometimes actuated with quicklime. The greatest quantities of soap are made in Spain, Portugal, France, and Italy; olive oil being in those countries most plentiful.

STAMPS. As a mode of taxation, Government have enacted that certain instruments shall not be valid unless they are executed on paper bearing a stamp of a specified value, the imitation of which is a criminal offence These stamps vary in amount, which may be ascertained from time to time by referring to any of the ephemeral tables of taxes.

STARCH [Fr. *Amidon*, Ger. *Amidam*] is procured generally from wheat-flour and potatoes. The best kind is white, soft, and friable, and easily reduced to powder. It is employed principally by calico printers, bleachers, &c.

STEEL [Ger. *Stahl*, Du. and Da. *Staal*, Sw. *Stål*, Fr. *Acier*, It. *Acciajo*, Sp. *Acero*, Port. *Aço*, Rus. and Pol. *Stal*, Lat. *Chalybs*] is iron refined in the fire with certain ingredients that render it white, and impart to it a harder and finer grain than that of the original metal. Iron is converted into steel, either by fusion or cementation; the former method is employed for making steel immediately from the ore, or from the crude, cast metal; in the latter, bars of iron are placed in the furnaces, with a stratum of charcoal between each, till the pile is raised to a sufficient height; the whole is then closely covered, to prevent the access of the air, when a strong fire is kindled, and uniformly continued during the whole process; the surface of the metal, manufactured in either way, generally exhibits numerous vesicles, whence it is called blistered steel; but these may be removed by repeated ignition between red-hot coals, and by forging.

STERLING, a term frequent in British commerce. A pound, shilling, or penny sterling signifies as much as a pound, shilling, or penny of lawful money of Great Britain, as settled by authority. The estimated gold coin in England, as far as it can be ascertained, is £70,000,000; of silver, £13,000,000; and of copper, £1,000,000; nearly £84,000,000 altogether of metallic coin in England.

SUGAR [Fr. *Sucre*, It. *Zucchero*, Sp. *Azucar*, Ger. *Zucker*, Du. *Suiker*] is obtained chiefly from the pith of a large perennial grass which grows in deeply-ploughed, rich soil, in countries within the 32nd degree of latitude. The juice of the cane, when ripe, is expressed by means of powerful rollers, at the rate of about 65 per cent. of the bulk. The sweet, brownish coloured liquid thus obtained is then placed in hot copper vessels, and, when boiled, is allowed to run into cooling pots, where it remains until crystallization takes place, when it is passed into casks with holes, through which the molasses, or crystallised portion, is drawn off. It is next dissolved in tanks containing a small quantity of water and a certain proportion of bullock's blood, for the purpose of removing impurities. It is afterwards filtered, first through cotton bags, and then through a cylindrical machine filled with charcoal, from whence it is passed again into pans and is boiled. From these boilers it is run into the sugar-loaf form, and when almost dry and free from treacle, is, if white in colour, retained in the same shape; but if brown, the loaves are broken up, and converted into what is called crushed sugar The four descriptions of sugar consumed in this country are:—*Muscovado sugar*, that which has been shipped unpurified; *Clayed sugar*, that which has been partially cleared by the use of clay; *Refined sugar*, and *Candy sugar*, the latter being formed by boiling brown sugar until it is thick enough to be made into sock, or stick, candy. From the West and East Indies, the Southern States of America, Brazil, Mauritius, Java, and the Philippine Islands the great supplies of this article are obtained. *Consumption*. In 1872 there were 15,505,998 cwt. of sugar of all sorts imported into the United Kingdom. The import of sugar from British possessions advanced from 5,132,967 cwt. in 1871 to 5,224,470 cwt. in 1872; but the import from foreign countries advanced from 8,634,499 cwt. in 1871 to no less than 10,281,528 cwt. in 1872. The import from the Spanish West Indies rose from 1,430,733 cwt. in 1871 to 3,091,275 cwt. in 1872; from Brazil, from 1,242,311 cwt. to 1,878,587 cwt.; from France, from 1,948,138 cwt. to 2,238,811 cwt. The import from Germany declined from 1,152,179 cwt. in 1871, to 341,816 cwt. in 1872. The quantity entered for home consumption was 14,049,995 cwt. in 1871, and 14,306,159 cwt. in 1872. The average declared value of sugar in 1872, exclusive of duty, was 23*s*. 8*d*. per cwt. for British East India, 26*s*. 8*d*. for British West Indies, 27*s* 4*d*. for Mauritius, and 27*s*. 8*d*. for Spanish West India. This last being 8*d*. per cwt. higher than in 1871, Mauritius 2*d*. lower, but British West India 2*s*. higher, and British East India 3*s*. 2*d*. higher.

SULPHUR [Fr *Souffre*, Ger. *Schwefel*], or Brimstone. The native sulphur of commerce is brought mostly from Sicily, where it occurs in beds along the central part of the south coast and to some distance inland. About 80,000 tons are annually imported from Sicily into the United Kingdom. It is also imported from one of the Lipari Islands, and from the Solfatara, near Naples.

SUMATRA, an island of the Indian archipelago, lying in a N.W. and S.E. direction along the S. part of the Malay peninsula, between *Lat.* 5° 45' N. and 5° 55' S., and *Long.* 95° 20' and 160° S.E. *Area*, about 160,000 square miles. *Pop.*, about 5,000,000. There are many good harbours on the S.W. coast, that of Tapanooly being considered one of the finest in the world. The trade of Sumatra is principally carried on with Java, Madeira, Singapore, Malacca, Penang, and British India. The chief *exports* are pepper, gold-dust, camphor, nutmegs, cloves, mace, benzoin, copper, tin, sulphur, and coral.

SWEDEN occupies the eastern portion of the Scandinavian peninsula. It is bounded on the N.E. by Russia; on the N.W. and W. by Norway; on the S.W. by the Cattegat and Sound, separating it from Denmark; on the S.E. by the Baltic; and E. by the Gulf of Bothnia. *Area*, 168,042 English square miles; *pop*. 4,195,681. *Principal towns and pop.* Stockholm, 140,257; Gothenburg, 48,127; Norkoping, 23,709; Malmoe, 22,711; Carlskrona, 17,171; Gefle, 12,908; Upsala, 11,030; Lund, 10,268; Johnkeping, 10,371. The *forests* cover about two-sevenths of the entire area. The varieties of timber are few. In the north the pine, birch, and fir are the principal trees; in the central parts, the ash, elder, willow, and maple are also common; and in the south, the oak, beech, elm, and lime are met with. *Agriculture*, though so little favoured by either soil or climate, is making considerable advances. The principal crops are, rye, barley, oats, wheat, potatoes, peas, hemp, flax, &c. *Minerals* are, next to agriculture, the chief source of the wealth of Sweden. Iron ore is found in almost every district. The largest quantities are produced in Carlstad, Orebro, Gefle, Falun, and Westeras; but the cast iron is obtained from the mines of Dannemora, in the län of Upsala. Next to iron, copper forms the most important of the mineral productions. The most important mines are those of Falun, in Dalarne, but mines are also worked at Otoidaberg, in Linkoping-län. Gold is found at Falun and a few other places. The principal silver mine is at Sala, in Westeras. *Industries*. Great progress has been made of late years. The number of factories of various kinds is 2,421, the total value of whose produce amounts to about £3,949,337. There are 102 cotton-mills in active employment, manufacturing miscellaneous textile stuffs, consisting of shawls, cloths, and blankets; 15 establishments weaving cambric, calico, domestics moleskins, furniture, prints, shirtings, fustian, and other stuffs; several tent and sail cloth manufactories; 15 producing hosiery; 20 rope walks; 5 silk factories, all in Stockholm. They produce entire and half-silk stuffs, kerseys, shawls, &c.; 9 chintz and cotton-printing works; 10 sugar refineries; 90 tobacco manufactories; 425 dye-houses; 696 tanneries; 84 paper mills; 104 engineering establishments; and 474 miscellaneous manufactories producing articles to the value of £99,000 annually. The *Commerce* of Sweden is chiefly with the United Kingdom, and next to it with Germany, Denmark, and Russia

The *imports* are mainly textile manufactures, coal, machinery, and colonial produce; and the *exports* are principally timber, bar iron, and corn.

	Total Exports.	Total Imports.
1865	£5,831,277	£6,004,777
1866	6,222,778	5,948,212
1867	7,454,501	7,146,611
1868	7,652,222	6,640,222
1869	7,589,722	6,990,722

The exports from Sweden to the United Kingdom in 1866 amounted to £4,001,856; in 1867 to £4,756,503; in 1868 to £4,392,279; in 1869 to £4,498,384; and in 1870 to £6,399,435. Imports of British home produce into Sweden in 1866, £823,488; in 1867 to £647,318; in 1868 to £617,683; in 1869 to £706,990; in 1870 to £1,025,716. *Shipping*. Total number and tonnage (in Swedish lasts of about 3¾ tons each last), of merchant vessels which belonged to Sweden in each year from 1863 to 1867: 1863. Vessels, 3,236: lasts, 86,404 1864. Vessels, 3,198; lasts, 87,820. 1865. Vessels, 3,155; lasts, 83,524. 1866. Vessels, 3,325; lasts, 89,559. 1867. Vessels, 3,301; lasts, 94,842. *Money*. The rix dollar mynt, 18 = £1. Average rate of exchange, 1*s*. 1½d. *Weights and Measures*. The ort = 16 troy grains; oz. = 405 troy grains; centner = 93·71 lb avoir.; skalpund, or pound, commercial weight = 0 937 lb. avoir.; metal weight = 0·747 lb; lispund of 20 skalpunds commercial = 18·7 lb. 5 to the cwt.; metal = 14·9 lb. 7½ to the cwt.; skeppund of 20 lispunds commercial = 384 lb.; metal = 398 lb.; miners = 332 lb.; skeppund of 26 lispunds raw iron = 558 lb.; new Swedish last = 3·27 tons; tunna of corn = 4½ bushels; other agricultural produce = 4 bushels; salt 4½ bushels; coal = 4 bushels; kanna = 4·6 imp. pints of about 1¾ to imp. gall.; ell = 23·4 Eng. inches, about 2-3rds of a yard; cubic foot = 11·7 Eng. cubic inches; mile = 6·6 Eng. miles. *Ports. Stockholm* (cap.), principal commercial emporial on the E. coast, at the junction of Lake Maelar with the Baltic, *lat.* 59° 20′ 6″ N., *long*. 18° 3′ 7″ E. The entrance to the port is somewhat difficult, but when once inside, large vessels can lie close to the quays. *Gottenburg* is at the head of a fiord on the Kattegat, at the entrance of the Gotha navigation. *Lat.* 57° 42′ N., *long*. 11° 56′ E. The harbour, defended by three forts, has 17 feet of water.

SWITZERLAND [Ger *Schweiz*, Fr. *La Suisse*, Lat. *Helvetia*], a federal republic of Central Europe, between *Lat.* 45° 50′ and 47° 50′ N., and *Lon*. 6° and 10° 25′ E. Bounded N. and E. by Germany, S. by Italy, and W. by France. *Area* 15,991 square miles. *Pop*. 2,510,494. The republic consists of 22 cantons, or, as 3 cantons, Unterwalden, Appenzell, and Basel, are divided into 2 independent half-cantons each, of 25 states. *Minerals*. The iron mines produce from 10,000 to 15,000 tons annually; the lead mines, 500 tons; and the copper mines about 250 tons. The other products are inconsiderable. As a *pastoral country* Switzerland is celebrated. In 1866 there were 105,792 horses, 992,895 cattle, 304,191 swine, 445,400 sheep, 374,481 goats. The finest breeds of cattle are those of the Simmenthal (Bern), Gessenay, Gruyère (Freiburg), Zug, and Schwytz. The best cheese is made in the Emmenthal, Scranenthal, and Simmenthal, in Gruyère, and in the valleys of the Emmen, Saane, and Simmen. *Commerce*. Chief commercial relations are with the adjoining states, Austria, Italy, France, and Germany, and with the United Kingdom and North America. *Chief cities*. Geneva (cap.), Basle, Zurich, Berne, St. Gall, Lausanne, Schaffhausen, and Appenzell. *Textile fabrics*. In spite of her remote inland position, the conformation of her soil, which presents great obstacles to internal communication, her want of capital, as of most of the first elements of commercial prosperity, Switzerland has, after a long and severe struggle, become entitled to rank as an important manufacturing state. Her textile fabrics, for instance, penetrate to the most distant quarters of the globe, where they now find as ready a sale as others longer and better known. Her silk manufacturers boldly assert that, especially as regards cheap silks and silk ribbons, they are able at last not only to undersell on the Continent the British producer of similar articles, but even to compete with him in the home markets of Great Britain In the production of all goods embroidered, whether by machine or by hand, she has completely distanced her Scotch and Saxon competitors, and now has a virtual monopoly of this important branch of industry. The Swiss aver that they partly owe their present prosperity to the discovery of new channels of trade which, from their very insignificance, have been neglected by their more powerful competitors, to the close adaptation of their manufactures to the wants and tastes of their customers, and, finally, to the continual production of new patterns and designs. The imports of raw textile material of all kinds, including yarns, have risen from 47,119,675 lb. in 1860, to 77,541,359 lb. in 1871, being an increase of 64½ per cent. in twelve years. Deducting the raw textile material and yarns exported, there remained for consumption in the manufactories, and for conversion into tissues, 40,082,788 lb in 1860, against 52,736,901 lb. in 1871, *the difference in favour of the* latter year amounting to over 31½ per cent. The exports of yarns and textile fabrics have risen from 25,203,173 lb. in 1860 to 48,300,775 lb. in 1871. It will thus be seen that, while the imports of raw material, &c., show, during the twelve years, an improvement of only 64½ per cent., the exports of textile fabrics, &c., increased 92¼, a difference of nearly 28 per cent. in favour of the latter. *Silk* holds the first place among the exports, owing as much to the great value as to the enormously increased exportation of the manufactures of this staple. The exports rose from 3,612,387 lb. in 1860, to 8,053,312 lb. in 1871, or 147¾ per cent., while the estimated value increased from

£8,870,748 to £20,663,966, or 132⅞ per cent. The greater part of the sewing-silk spun is exported to France and Belgium; not above 10 per cent. of the annual production (about £600,000) found its way to countries beyond the sea. The average annual value of the ribbon manufactories is estimated at £1,600,000. The United States and England are the principal markets for this article. In ordinary years it was calculated that the canton of Zurich turned out 27,000 pieces of silk, valued at £2,600,000. Of these silks England and Canada bought to the extent of £1,000,000; the United States, £700,000; France, £280,000; the Zollverein, Austria, Denmark, Sweden, and Norway, £280,000; the Levant and Far East, £160,000. The gross imports of silk, raw, bleached, dyed, spun, or thrown, which, in 1860, were 3,952,248 lb., had risen in 1871 to 8,156,823 lb., showing, therefore, an increase of 4,204,575 lb.=106⅜ per cent. The net imports at the dates stated were respectively 2,321,637 lb. and 3,710,186 lb.; difference in favour of the latter, 1,388,549 lb.=59¾ per cent. The average consumption during the said period came to 2,531,541 lb. per annum. The apparent discrepancy between the consumption of silk and the exports of silk tissues and ribbons, &c., the latter being considerably larger in amount than the former, is easily accounted for. First, under the heading of silk tissues are included in the Swiss returns all stuffs in the texture of which silk enters for 50 per cent. Secondly, as regards ribbons, 10 per cent. has, on an average, to be deducted from the gross weight of the massive wooden reels still in common use among Swiss manufacturers. The imports of silk are made up as follows:—Cocoons and waste silk, 1,501,925 lb. in 1860 to 3,523,728 lb. in 1871; increase, 2,021,803 lb.=134½ per cent.: deducting the exports, there remained 983,623 lb. in 1860 to 1,997,479 lb. in 1871; difference, 1,013,856=103 per cent. Silk, raw, carded, spun, or thrown, 2,453,190 lb. in 1860, to 4,446,174 lb. in 1871; increase, 1,992,784 lb.=81¼ per cent. Deducting the exports, there remained 1,784,473 lb. in 1860 to 1,521,289 lb. in 1871; decrease, 263,184 lb.=14¾ per cent. Silk, bleached or dyed, and sewing silk, 5,571 lb in 1860 to 204,212 lb. in 1871; increase, 198,641 lb. The inference to be drawn from these figures is, that the exports of spun and thrown silk, &c., have increased at a very rapid rate, and absorb a considerable portion of the silk imported. The quantity of cocoons imported is relatively small, and but little raw silk is re-exported. The number of manufactories of silk tissues is stated to have been 120, or thereabouts, in 1867, of which 113 were in the canton of Zurich. But, according to a publication issued by the statistical department of that canton, there were only 47 silk factories of all kinds on the 1st Dec., 1870. The number of hand-looms in 1855 were officially ascertained to be 25,291, and in 1867 it was estimated at 30,000. The total number of looms is now said to be about 25,000, including between 700 and 800 mechanical looms. The number of weavers, reelers, &c., exclusive of dyers, dressers, foremen, &c., was calculated in 1867 to be over 36,000. In 1867 there were 87 ribbon factories, and close on 9,000 looms; of this number, between 1,500 and 1,600 were power-looms. Bale is the chief seat of the ribbon trade, which was there supposed to afford occupation to about 27,000 hands, at, comparatively speaking, high wages. In addition there were 16 silk-throwing mills; 21 silk-spinning mills, employing between 4,000 and 5,000 men; and 10 silk-throwing factories. Finally, silk in small quantities is produced in the canton of Tessin, and in some parts of that of Valais. *Cotton* manufactures are the next in importance to silk. The exports of cotton yarns and tissues rose from 20,945,119 lb. in 1860 to 37,751,356 lb. in 1871; and the estimated value from £3,527,505 to £5,540,727, showing a difference as regards the former of 80¼ per cent., and of 57 per cent. with respect to the latter. The increase in the export of yarns amounted to about 321 per cent. against only 40¼ per cent. in tissues. Yarns are chiefly exported to Alsace and Austria; raw and unbleached tissues to Alsace; and light-coloured tissues to Turkey, Asia Minor, Persia, the East Indies, Singapore, Batavia, Manilla, Japan, and Brazil. The gross imports of cotton rose from 37,347,120 lb. in 1860 to 60,593,390 lb. in 1871, being an increase of 23,246,270 lb =62¼ per cent. The net imports rose from 32,718,760 lb. in 1860 to 42,759,991 lb. in 1871; increase, 10,041,231 lb.=30¾ per cent., the average annual consumption being 26,975,641 lb. The net imports may be taken to represent the amount actually converted into tissues. Of raw cotton and waste there were imported 36,602,506 lb. in 1860, and 58,612,580 lb. *in 1871; an increase of* 22,010,074 lb. = 60 per cent. Deducting the exports of the same, there remained 34,826,139 lb. in 1860, and 52,895,922 lb. in 1871; increase, 18,069,783 lb.=51⅞ per cent. The importation of raw cotton, yarn, and twist amounted to 428,939 lb. in 1860, and 1,293,338 lb. in 1871; increase, 864,399 lb.=201½ per cent. The quantity of bleached or dyed yarns, twist, and thread imported came to 395,462 lb. in 1860, and 816,919 lb. in 1871; increase, 421,457 lb= 106⅝ per cent. The returns only give the total exports of yarns, &c., of all kinds under one heading, and they greatly exceeded the imports, the net amount exported being 2,037,479 lb. in 1860, and 10,044,582 lb. in 1871; increase, 8,007,103 lb.=393 per cent. The estimated number of spindles in Switzerland was, in 1850, between 1,000,000 and 1,100,000. In 1867 it had risen to 1,554,527, as far as could be ascertained. It is now estimated that the number is between 2,200,000 and 2,300,000. The numbers of the yarns spun run from No. 10 to No. 300. No. 12 is the lowest in ordinary use. It is estimated that No. 40 furnishes one-half of the total production. It is employed in the manufacture of coarse calicoes and coloured tissues. Fine tissues, muslins, and tarlatanes are made with Nos. 60 to 200. The cost of manufacturing the different yarns is stated to be about 6*d.* per kilog. for *20s*, and about 8*d.* for *40s*. There are no means of ascertaining the actual number of looms; but in 1867 there were, it is stated, 42,569 hand-looms and 13,086 power-looms. Since that date a great increase must have taken place, at any rate in the number of power-looms, for in the canton of Zurich they had risen in 1870 from 3,645 to 6,265. The outlay per loom is estimated at £60 for white tissues, and £120 for coloured. The cost of manufacture is roughly calculated at 33⅓ per cent. additional on the value of the yarn as regards calico for printing purposes. The number of workmen employed is, on an average, one to three power-looms, from five to seven looms being driven by one horse-power. Most of the tulles, muslins, and cambrics embroidered in Switzerland are still imported chiefly from England. The number of embroidering machines is about 7,000, at which 15,256 workmen and workwomen are occupied. As the proportion between the numbers employed at mechanical embroidering and embroidering by hand is about two to five, the total number may be estimated at from 40,000 to 50,000 Strange to say, nearly one-half of these are to be found in Germany; for the Swiss manufacturers send the stuffs to be embroidered to the Vorarlberg, and to different parts of Bavaria, Wurtemberg, Baden, and Sigmaringen. The exports of *woollen yarns and manufactures* have increased even at a more rapid rate than those of silk and cotton; but the total amount is insignificant, and scarcely deserving of notice. They have risen from 349,242 lb. in 1860 to 1,476,715 lb. in 1871, an increase of 322¾ per cent. The estimated value in 1860 was £59,844, against £234,305 in 1871, a rise of 291½ per cent. The exports of *linen fabrics* is even less than that of woollen, as the following figures will show. Quantity exported in 1860, 296,426 lb.; in 1871, 319,392 lb.; increase, 7¾ per cent.; estimated value, £26,928 in 1860; £25,888 in 1871; decrease, 3⅞ per cent. In addition to the above many articles are exported which do not properly come under any one of the four preceding heads in particular, though belonging to the class of textile fabrics. It was, for instance, estimated in 1867 that mechanical embroideries, to the value of £400,000, were annually exported. Since that date the number of embroidery machines has increased more than fivefold.

VALUE OF SILK AND COTTON FABRICS EXPORTED FROM SWITZERLAND FOR THE TWELVE YEARS 1860–71 :—

Years.	Silk.			
	Spun Silk, &c.		Silk Stuffs, &c.	
	Francs.	£	Francs.	£
1860	20,276,100	811,044	201,492,620	8,059,704
1861	24,074,700	962,988	195,107,780	7,804,311
1862	29,219,900	1,168,796	247,880,920	9,915,236
1863	29,263,500	1,170,540	285,978,210	11,439,128
1864	23,907,950	956,318	276,405,850	11,056,234
1865	30,419,000	1,216,760	254,353,120	10,174,124
1866	28,622,900	1,144,916	282,797,830	11,311,913
1867	33,398,150	1,335,926	229,252,940	9,170,117
1868	43,128,650	1,725,146	225,160,920	9,006,436
1869	25,877,900	1,035,116	233,439,710	9,337,588
1870	92,140,500	3,685,620	311,594,640	12,463,785
1871	132,892,750	5,315,710	383,706,400	15,348,256

Years.	Cotton.			
	Cotton Yarn, &c.		Cotton Stuffs, &c.	
	Francs.	£	Francs.	£
1860	5,192,330	207,693	82,995,310	3,319,812
1861	4,883,910	195,356	81,061,485	3,242,459
1862	6,653,544	266,141	83,591,645	3,343,665
1863	10,767,306	430,692	79,563,155	3,182,526
1864	7,913,782	316,551	81,410,155	3,256,406
1865	8,091,198	323,647	90,492,985	3,619,719
1866	7,047,748	281,909	96,955,155	3,878,206
1867	13,582,404	543,296	104,960,205	4,198,408
1868	19,109,110	764,364	113,293,590	4,531,743
1869	22,310,660	892,426	109,400,770	4,376,030
1870	19,748,994	789,959	100,131,445	4,005,257
1871	22,052,596	882,103	116,465,580	4,658,623

Switzerland

The Swiss Custom-house returns do not contain any indication of the value of the imports and exports. Therefore the values given in the above table are merely approximate. The valuations are based on the following scale:—

Spun, thrown silk, floret silk, &c., at 5,000 francs per quintal = 110 lb. English.

Silk and half-silk stuffs, ribbons, &c., at 7,000 francs per quintal = 110 lb English.

Cotton yarn, twist, thread, &c., at 200 francs per quintal = 110 lb. English.

Cotton cloths, tapes, &c., at 500 francs per quintal = 110 lb. English.

Woollen yarns, &c., at 412·50 francs per quintal = 110 lb. English.

Woollen stuffs, &c., at 475 francs per quintal = 110 lb. English.

Hemp, flax, and linen yarn, threads, &c., at 162·50 francs per quintal = 110 lb. English.

Linen cloths, &c., at 300 francs per quintal = 110 lb. English.

Pack cloth, at 50 francs per quintal = 110 lb. English.

THE SWISS COTTON INDUSTRY.

	Eng. lb.
Average quantity of raw cotton and yarns annually consumed since 1860	26,975,641
Raw cotton consumed in 1871	52,895,922

Estimated number of spindles in 1872, between 2,200,000 and 2,500,000. Description of cotton generally used:—1st. American middling. 2ndly. Egyptian and Surat Mixtures: Surat and low middling; Egyptian and good middling. Duty, 6 francs = 4*s.* 9½*d.* per 1,000 kilog. Freight on raw cotton, in parcels of at least 5,000 kilog., per 1,000 kilog.—Liverpool to Bale:—From the vessel and by direct steamer, *viâ* Antwerp—

	fr.	c.		£	s	d.
American	78	50	=	3	2	9½
East Indian	65	50	=	2	12	4¾
If 7,500 kilog. on 1 truck	61	75	=	2	9	4¾
From railway station *viâ* Goole and Ghent—						
American	75	50	=	3	0	4¾
East Indian	68	50	=	2	14	9½
If 7,500 kilog. on 1 truck	65	0	=	2	12	0
From railway station *viâ* Harwich and Antwerp—						
American	78	50	=	3	2	9½
East Indian	75	0	=	3	0	0
If 7,500 kilog. on 1 truck	72	0	=	2	17	7

All expenses included, except duty, 6 francs = 4*s.* 9½*d.*, marine insurance, necessary repairs, postage and stamps.

Freight on cotton goods, per 1,000 kilog.—Manchester to Bale—

	fr.	c.		£	s.	d.
By quick train	250	0	=	10	0	0
By goods train	118	0	=	4	14	4¾

Conditions as before. Duty varies from 40 francs = £1 12*s.* on raw yarns, to 300 francs = £12 on tulles, &c.

Switzerland

Cost of coal per 1,000 kilog. in principal industrial centres:—

	fr.		fr.		s.	d.		s.	d.
Aarau	25	to	0	=	20	0	to	0	0
Zurich	28	,,	30	=	22	4½	,,	24	0
Glaris	33	,,	35	=	26	4½	,,	28	0
Coire	33	,,	35	=	26	4½	,,	28	0

The average price is about 30 fr. = 24*s.*

Average consumption of coal per horse-power per hour, 2 kilog.

Average consumption of coal per horse-power per day (12 hours), 24 kilog.

Average consumption of coal per horse-power per year (300 days), 7,200 kilog.

Average cost of coal per horse-power per hour, 6c. = 0[illegible]*d.*

Average cost of coal per horse-power per day (12 hours), 72 c. = 6[illegible]*d.*

Average cost of coal per horse-power per year (300 days), 216 fr. = £8 12*s.* 9½*d.*

Table showing total cost of manufacture of fine yarns of Egyptian cotton in the Hurlimann spinning mills at Rapperswyl, canton of St. Gall:—

Number of spindles, 23,760; of these, 12,096 self-acting, and 11,664 ordinary.

Number of operatives, 190; or 8 per 1,000 spindles.

Number of working hours per day, 12.

Number of working days per annum, 300.

Motive power—horizontal water wheels of 75 horse-power; steam engines of 80 horse-power; total, 155.

Consumption of coal—In 1871, 11,342 centners, at 2 fr. 28 c. per centner, or at 46 fr. 31 c. per ton = 559 tons 7 cwts., costing £1,036 2*s.* 9½*d.*; in 1872, 11,100 centners, at 1 fr. 88 c. per centner, or 38 fr. 18 c. per ton = 546 tons 14 cwts., costing £835 0*s.* 3½*d.*

86 horse-power required to drive the spindles.

Steam-engine has to be kept at work the whole year round, as the supply of water is very uncertain, and in dry seasons frequently fails altogether.

Produce in 1871, 204,800 lb. Swiss of yarn = 226,231 lb. English; or, at the rate of 8·6 lb. Swiss = 9·48 lb. English per spindle per ann.

Average quality of yarns manufactured, No. 84.

Wages in 1872.

	fr.	c.		fr.	c.	s.	d.		s.	d.
Overseers (foremen)	3	20	to	3	50	2	6½	to	2	9½
Spinners	2	80	,,	3	20	2	2½	,,	2	6½
Spinners (self-acting spindles)	2	20	,,	2	50	1	9	,,	2	0
Carders	1	90	,,	2	10	1	6½	,,	1	8
Ordinary workmen	2	00	,,	0	0	1	7	,,	0	0
Winders (women)	1	50	,,	1	80	1	2½	,,	1	2½
Piecers	1	35	,,	1	45	1	0½	,,	1	1½
Bobbin and fly frame women	1	45	,,	1	55	1	1½	,,	1	2½
Children	1	20	,,	1	30	0	11½	,,	1	0½

In 1860 hosiery of all kinds (*Strumpfwirkwaaren*), was exported to the amount of 7,162 lb. In 1871 the exports had increased to 91,071 lb., or 1·184 per cent.

Cost of Manufacturing, in 1871, per 100 lb. Swiss = 110 lb. English of Yarn.

	fr.	c.	£	s.	d.
Interest on capital employed	22	02	0	17	7¼
Amortisation........................	11	71	0	9	4½
Insurance	1	90	0	1	6¼
Taxes............................	4	14	0	3	3¾
Wages	39	70	1	11	9
Office expenses	2	50	0	2	0
Postage and telegrams	0	50	0	0	4½
Coals for steam engine	12	70	0	10	2
Greasing machinery	2	34	0	1	10½
Requisites of all kinds ("Garnituren")	1	89	0	1	6
Keeping in repair machinery	2	40	0	1	11
Keeping in repair buildings..	0	69	0	0	6¼
Packing the yarn	2	30	0	1	10
Incidental expenses	1	92	0	1	6¼
Heating.........................	0	97	0	0	9¼
Lighting	0	72	0	0	7
Total.............	108	40	4	6	8½

Money. The franc of 10 batzen and 100 rappen or centimes. Average rate of exchange, 25 = £1. *Weights and Measures*. The centner of 50 kilogrammes and 100 pfund = 110 lb. avoir. The arpent (land) = 8-9ths of an acre.

T

TAAG, a name for hemp procured in Bengal from the *Crotaloria juncea*.

TABBY, a rich kind of watered silk, or variety of taffety.

TABLE, among the jewellers. A table-diamond, or other precious stone, is that whose upper surface is quite flat, and only the sides cut in angles; in which sense a diamond cut tablewise is used in opposition to a rose-diamond.

TACAMAHACA [Ger. *Takamahak, Hack und tack*, Du. *Takamahak*, Da. *Hak og tak*, Sw. *Taçamahac*, Fr. *Tacamacha, Gomme tamachá*, It. *Taccamaca*, Sp. and Port. *Tacámaca*, Lat. *Tacamahaca*], a solid resinous substance, brought from New Spain; it is said to be collected likewise in certain other provinces of America, and in the island of Madagascar. There are two sorts of it. The best is called tacamahaca in shells; this is concrete, somewhat unctuous and softish, of a pale yellowish or green colour, collected in a kind of shells made from the rind of certain fruits of the gourd kind, and covered over with leaves. Its smell is exceedingly fragrant and delightful, approaching to that of lavender or ambergris, its taste resinous and aromatic. The kind commonly met with in shops is in semi-transparent globules, of a whitish, yellowish, brownish, or greenish hue, and of a fragrant odour, less grateful, however, than that of the foregoing.

TALLOW [Ger. *Talg*, Du. *Ongel*, Da. *Tælg*, *Talg*, Sw. *Talg*, Fr. *Suif*, It. *Sevo, Sego*, Sp. and Port. *Sebo*, Rus. *Salo saplenoe*, Pol. *Zoy*, Lat. *Sebum*], a sort of animal fat, melted down and clarified, being used in making soap and candles, in the dressing of leather, and by salt-boilers for the purpose of imparting a large grain to the salt. Tallow is either *yellow* or *white candle*, or *soap tallow*. Its goodness consists in its sweetness and purity.

TALLOW-TREE, a tree growing abundantly in China, which produces a substance like our tallow, and which serves for the same purposes. This substance is inclosed in a stone or kernel, which is found in the pods produced by the tallow-tree. It is a white pulp, and has the exact consistence, colour, and smell of Russian tallow. The only preparation it undergoes is being melted down, and mixed with a little oil to make it softer and more pliant.

TAMARINDS [Ger. and Du. *Tamarinden*, Da. *Tamerin*, Sw. *Tamarind*, Fr. *Tamarins*, It. and Sp. *Tamarindo*, Port. *Tamarinho*, Lat. *Tamarindus*], the fruit of the *tamarindus indica*. It is a pod resembling a bean-pod, including several hard seeds, together with a dark-coloured viscid pulp, of a pleasant acid taste; the East India tamarinds are longer than the West India sort; the former containing six or seven seeds each, the latter rarely above three or four.

TAMBAC, the white alloy of copper of the Chinese.

TANJIB, a light cotton fabric, made in Manchester for the Egyptian and Indian markets.

TAONBAC, or TOMBAQUA, a mixture of gold and copper, which the people of Siam set a greater value on than gold itself, considering it more beautiful.

TAPE [Ger. *Band*, Du. *Lind, Band*, Da. *Baand*, Sw. *Band*, Fr. *Ruban de fil*, It. *Nastro*, Sp. *Cinta*, Port. *Fita*, Rus. *Lenta*, Pol. *Wstega*], a sort of ribbon or narrow band, made either from flaxen or cotton thread. Tape is woven upon a small loom in the manner of linen, &c., and the only difference between it and linen or calico is, that its warp is narrower. Vast quantities of this article are manufactured in several parts of England, especially in Lancashire; there are likewise considerable manufactures of tape in Normandy, Holland, Flanders, and Germany.

TAPIOCA, a name given to white sago.

TAR [Ger. *Theer*, Du. *Teer*, Da. *Tiere*, Sw. *Tjära*, Fr. *Goudron*, It. *Catrame*, Sp. *Alquitran*, Port. *Alcatrão*, Rus. *Degot*, *Smola shitkaja*, Pol. *Smola gesta*]. If the wood of the turpentine trees be exposed to the fire, in a vessel everywhere closed, except an aperture at the bottom, as for example, in a retort, with the neck placed lowermost, the resinous juice melts out by the heat, and at the same time contracts an empyreumatic smell and taste; in this state it is tar. Tar is prepared in different parts of Germany, Norway, Sweden, &c., from the pine and the fir trees, and in some places from the larch and the terebinth. The wood is enclosed in a large oven, to the quantity of ten or more loads at a time; this stands within another oven called the mantle, the space betwixt them receiving the fire; from the bottom of the inner oven runs a gutter, by which the tar is conveyed off in proportion as it melts out of the wood.

Tare is an allowance for the outside package, that contains such goods as cannot be unpacked without detriment; or for the paper, threads, bands, &c., that inclose or bind any goods imported loose, or, though imported in casks, chests, &c., yet cannot be unpacked and weighed net.

Tariff, a table containing the names of different sorts of merchandise, with the duties to be paid, as settled by authority among trading nations. Return of articles subject to import duties in the United Kingdom, and the rate of duty levied upon each article, distinguishing the duties levied as ordinary import duties, and those levied to countervail excise and other Inland Revenue duties upon British productions, according to the tariffs in operation in May, 1870 and 1873:—

RATES OF DUTY.

Articles.		In English Measures and Money.			In Metrical Measures and Francs.		
ORDINARY IMPORT DUTIES.		£	s.	d.		frs.	cts.
Cocoa	lb.	0	0	1	kilog	0	23
,, husks and shells	cwt.	0	2	0	100 kilos	4	93
,, paste or chocolate	lb.	0	0	2	kilog	0	46
Coffee, raw	,,	0	0	3	,,	0	69
,, Kiln dried, roasted, or ground	,,	0	0	4	,,	0	92
Chicory, and other substitutes for chicory or coffee, raw or kiln, dried	cwt.	1	6	6	100 kilos	65	27
,, roasted or ground	lb.	0	0	4	kilog	0	92
Fruit, dried: currants, figs, fig-cake, plums not preserved in sugar, prunes, and raisins.	cwt.	0	7	0	100 kilos	17	24
Sugar: candy, refined sugar, or sugar equal in quality thereto	,,	0	3	0	,,	14	78
,, not equal to refined—							
First class	,,	0	2	10	,,	13	85
Second class	,,	0	2	8	,,	12	93
Third class	,,	0	2	5	,,	11	70
Fourth class including cane juice	,,	0	2	0	,,	9	85
Molasses	,,	0	0	10	,,	4	41
Succades, confectionery, and all fruits and vegetables preserved in sugar	,,	0	2	4	kilog	0	12
Tea	lb.	0	0	6	,,	1	38
Tobacco: unmanufactured, stemmed or unstemmed, containing in every 100 lb. weight thereof 10 lb. or more of moisture	,,	0	3	1¾	,,	8	67
,, containing less than 10 lb. of moisture	,,	0	3	6	,,	9	64
,, manufactured cigars	,,	0	5	0	,,	13	77
,, cavendish or negro-head	,,	0	4	6	,,	12	40
,, snuff, containing in every 100 lb. weight more than 13 lb. of moisture	,,	0	3	9	,,	10	33
,, ditto, not more than 13 lb. of moisture	,,	0	4	6	,,	12	40
,, other manufactured tobacco, or cavendish, or negro-head, manufactured in bond from unmanufactured tobacco	,,	0	4	0	,,	11	2
Wine, containing less than 26 degs. of proof spirits	gall.	0	1	0	hectolitre	27	50
,, ,, ,, 42 degs. ,,	,,	0	2	6	,,	68	75
[With an additional duty of 3*d.* per gallon for every degree of strength beyond the highest above specified.]							
IMPORT DUTIES TO COUNTERVAIL EXCISE DUTY UPON BRITISH MALT.							
Beer and Ale, the worts of which were, before fermentation, of a specific gravity not exceeding 1'065 degs. per barrel of 36 gallons	brl.	0	8	0	,,	6	11
,, ditto, exceeding 1'065, and not exceeding 1'090 degs.	,,	0	11	0	,,	8	40
,, ditto, exceeding 1'090 degs.	,,	0	16	0	,,	12	22
Beer, Mum	,,	1	1	0	,,	16	4

RATES OF DUTY.

Articles.		In English Measures and Money.			In Metrical Measures and Francs.		
IMPORT DUTIES TO COUNTERVAIL EXCISE DUTY UPON BRITISH MALT.		£	s.	d.		frs.	cts.
Beer, Spruce, the worts of which were, before fermentation, of a specific gravity not exceeding 1·190 degs.	,,	1	1	0	,,	26	4
,, ditto, exceeding 1·190 degs.	,,	1	4	0	,,	18	33
Essence of spruce		10 °/. *ad val.*				10°/. *ad val.*	
Malt	qtr.	0	1	5	,,	90	94
Vinegar	gall.	0	0	3	,,	6	88
,, pickles preserved therein	,,	0	0	1	,,	2	29
IMPORT DUTIES TO COUNTERVAIL EXCISE DUTY UPON BRITISH SPIRITS.							
Spirits, not sweetened or mixed—							
Brandy, Geneva, and unenumerated spirits	prf. gall.	0	10	5	litre d'alcool pur	2	86
Rum from any foreign country, being the country of its production	,,	0	10	2	,,	2	80
Ditto, not being the country of its production	,,	0	10	5	,,	2	86
Tafia, of and from any colony of France	,,	0	10	2	,,	2	80
Rum and spirits, of and from British possessions	,,	0	10	2	,,	2	80
Spirits, sweetened or mixed—							
Rum-shrub, liqueurs, and cordials, of and from British possessions	,,	0	10	2	,,	2	80
Perfumed and unenumerated spirits	,,	0	14	0	,,	3	85
Chloroform	lb.	0	3	0	kilog	8	26
Collodion	gall.	1	4	0	litre	6	60
Ether	,,	1	5	0	,,	6	88
Naphtha, or methylic alcohol, purified	prf. gall.	0	10	5	litre d'alcool pur	2	86
Varnish, containing alcohol	gall.	0	12	0	,,	3	30
IMPORT DUTIES TO COUNTERVAIL STAMP DUTIES ON BRITISH MADE ARTICLES.							
Plate, gold	oz.	0	17	6	hectogramme	68	32
,, silver	,,	0	1	6	,,	6	0
Playing cards	doz. pks.	0	3	9	12 jeux	4	69

Excise duties chargeable on sugar. Candy, brown, or white refined sugar, or sugar rendered by any process equal in quality thereto, per cwt. 9s. *Sugar not equal to refined.* First class, 2s. 10d.; second class, 2s. 8d.; third class, 2s. 5d.; fourth class, 2s.; molasses, 10d.; duty chargeable on sugar used in brewing, per cwt. 9s. 6d. *Drawback* allowed on the undermentioned descriptions of sugar refined in Great Britain or Ireland, on the exportation thereof to foreign parts, or on removal to the Isle of Man for consumption there, or on deposit in any approved warehouse in Great Britain or Ireland, or for the purpose of sweetening in bond: Upon refined sugar in loaf, complete and whole, or lumps duly refined, having been perfectly clarified and thoroughly dried in the stove, and being of a uniform whiteness throughout, and upon such sugar pounded, crushed, or broken in a warehouse approved by the Commissioners of Customs, such sugar having been there first inspected by the officers of Customs, in lumps or loaves, as if for immediate shipment, and then packed for exportation in the presence of such officers, and at the expense of the exporter, and upon candy, for every cwt., 3s. Upon refined sugar, unstored, pounded, crushed, or broken, and not in any way inferior to the export standard sample No. 2, approved by the Lords of the Treasury, and which shall not contain more than five per cent. of moisture over and above what the same would contain if thoroughly dried in the stove, for every cwt., 2s. 10d. Upon sugar refined by the centrifugal or by any other process, and not in any way inferior to the export standard sample No. 1, for every cwt., 3s. Upon other refined sugar unstored, being bastards or pieces, ground, powdered, or crushed, not in any way inferior to the export standard sample No. 3, per cwt., 2s. 10d.; ditto, not inferior to No. 4, per cwt., 2s. 8d.; ditto, not inferior to No. 5, per cwt., 2s. 5d.; inferior to the last mentioned, per cwt., 2s.

TARTAR is obtained in a state of impurity, encrusted on the bottoms and sides of casks in which wine has been kept. It is afterwards purified by dissolving it in boiling water, and filtering it while hot. On cooling, it deposits the pure salt in very irregular crystals. In this state it is sold under the name of crystals or cream of tartar.

Tea [Fr. *Te*, Port. *Cha*, Ger. *Thee*, It. and Sp. *Te*, Rus. *Tchai*, Lat. *Thea*]. The shrub of this name is cultivated principally in China and Japan, where it grows to a height of nearly five feet. It resembles a myrtle in appearance, and its leaves are alternate, on short, thick footstalks, and are of a large elliptical form. Of late years it has been introduced with comparative success to the higher latitudes of India, and also to Brazil, where it also thrives, but loses the aroma so prized by consumers. For commercial purposes we depend upon the Chinese provinces of Fokien and Canton for supplies of black tea, and upon those of Kiang-nan, Kiang-si, and Che-kiang for green. The plant is propagated from seeds sown in rows of about four feet apart, and in the course of from two to three years bears a crop. There are three gatherings of leaves, but both the second and third lack fragrance and flavour, and are seldom submitted to the exporter. When the leaves are gathered, they are placed in shallow iron pans, and exposed to the air, and, when sufficiently dry, they are then, in the same vessels, carefully roasted until they become soft and pliable. When cooled, they are rolled by hand, and by this means twisted into the necessary form. That operation over, they are roasted again, and then assorted for sale. The early spring leaves of the black-tea plants constitute what is called Pekoe, which sometimes is perfumed by the addition of Chinese orange-blossoms. This description is the highest quality in the market. Bohea is a coarse, woody leaf, and is generally made up from the lowest qualities. Souchong ranks next to Pekoe, being a strong black tea, but without the delicate flavour of the latter. Gunpowder is made from the early spring buds, and green teas are manufactured from the same leaves as black, but roasted in different vessels and in another manner.

Teak Wood is the produce of a tree a native of Ava and Pegu, and also of Malabar. It is used largely in the construction of vessels employed in Indian waters.

Thread, a small line, made up of a number of fine fibres of any vegetable or animal substance, such as flax, cotton, or silk, from which it takes its name of linen, cotton, or silk thread.

Tick, or **Ticking**, a sort of texture used for covering bedding. Ticking is made either from hemp or flax, being woven in the loom in the same manner as linen, from which, however, it differs, both in quality and appearance, being coarse and stiff, though close, and presenting a surface marked with narrow blue and white stripes alternately. Of this article, considerable quantities are manufactured in different parts of the United Kingdom.

Tiffany, a sort of transparent gauze, stiffened with gum, and pressed. It is much employed in the manufacture of artificial flowers, &c.

Timber includes all kinds of felled and seasoned wood. Of all the different kinds known in Europe, oak is the best for building; and even when it lies exposed to the air and water, there is none equal to it. Fir timber is, however, perhaps more generally useful than any other. It is used for flooring, wainscoting, and the ornamental parts of buildings within doors. Elm is the next in use, especially in England and France; it is very tough and pliable, and therefore easily worked; it does not readily split, and it bears the driving of bolts and nails better than any other wood. Ash is chiefly used by wheelwrights and coachmakers for shafts, &c. Beech is also used for several purposes. It is very tough and white when young, and of great strength, but liable to warp very much when exposed to the weather, and to be wormeaten when used within doors. Its greatest use is for planks, bedsteads, chairs, and other household goods. Wild chestnut timber was once esteemed, but is now little used. Walnut-tree is excellent for the joiner's use, it being of a more curious brown colour than beech, and not so subject to the worms. The goodness of timber not only depends on the soil and situation in which it stands, but likewise on the season in which it is felled. In this people disagree very much; some are for having it felled as soon as its fruit is ripe; others in the spring; and others, again, in the autumn. But as the sap and moisture of timber are certainly the causes that it perishes much sooner than it otherwise would do, it seems evident that timber should be felled when there is the least sap in it: viz., from the time that the leaves begin to fall till the tree begins to bud. This usually commences about the end of April in England.

Tin [Ger. *Blech*, *Weissblech*, Du. *Blik*, *Blek*, Da. *Blik*, Sw. *Bleck*, Fr. *Fer blanc*, It. *Latta*, *Banda stagnata*, Sp. *Hoja de lata*, Port. *Folha de Flandes*, Rus. *Blacha*, *Bhest*, Pol. *Blacha*, *Blacha pobielana*] is found in England, Saxony, Bohemia, Hungary, the Isle of Banca, the Peninsula of Malacca, in Chili and Mexico. Malacca furnishes the purest tin, and Cornwall the largest quantity. Tin occurs in two states of combination—the peroxide, and double sulphuret of tin and copper. The former is found in Cornwall in two forms. (1.) In veins, where it is intimately mixed with several other metals, such as arsenic, copper, and zinc; this is common tinstone. (2.) In loose rounded masses, grains, or sand, in alluvial soil, in which state it is called stream tin. The former, when reduced to the metallic state, yields block tin, while the latter yields grain tin, which is the purer of the two. The massive varieties of oxide of tin are called stream tin. What is termed wood-tin is found in reniform and botryoidal masses, or in wedge-shaped pieces, which have arisen from their partial destruction; the surfaces are generally water-worn. Wood tin exhibits various shades of brown, which sometimes appear in concentric bands, giving it a ligneous appearance, whence its name. Stream tin has evidently been derived from the destruction of tin veins or lodes, the lighter portions of the stony matter having been carried away by the water, which has rounded the fragments of the ore. *Eng. Cyc.* Exclusive of nearly £500,000 worth of tin and pewter wares exported annually to the United States, Italy, Germany, France, &c., about 30,000 cwt. of unwrought tin are exported, chiefly to France, Italy, and Russia.

TINCAL, rough or unrefined borax.

TOBACCO [Ger. *Taback, Rauchtaback*, Du. *Tabak*, Da. and Sw. *Tobak*, Fr. *Tabac*, It. *Tabacco*, Sp. and Port. *Tabaco*, Rus. *Tabak*, Pol. *Tobaka*, Lat. *Tabacum, Petum*], a plant whose leaves are in such general request in most parts of the world, that it forms a most extensive and important branch of commerce. As it occurs in commerce, this article is of a yellowish brown colour, soft and pliable, a little clammy, with something of a honey mixed with a narcotic odour. The taste is bitter, acrid, and nauseous. It is imported mainly in leaf from the United States, and manufactured into various kinds of tobacco in this country. The importation of unmanufactured exceeds 35,000,000 lb. annually, and manufactured 1,500,000 lb. It is consumed in the form of loose tobacco, cigars, and snuff, and at the rate of about £6,000,000 worth per annum. For the duties chargeable on its importation, *see* TARIFF.

TON, a measure of weight=20 cwt., or 2,240 lb. avoir.; in the measurement of a ship, a ton is reckoned as 40 cubic feet.

TONNAGE. The tonnage of goods and stores is taken sometimes by weight, and sometimes by measurement; and that method is allowed to the vessel which yields the most tonnage. In tonnage by weight, 20 cwt. make one ton. In tonnage by measurement, 40 cubic feet are equal to one ton. All carriages, or other stores to be measured by tonnage, are taken to pieces, and packed in the manner which will occupy the least room on board ship. All ordnance, whether brass or iron, is taken in tonnage by its actual weight. Musket-cartridges in barrels or boxes, all ammunition in boxes, and other articles of great weight, are taken in tonnage according to their actual weight.

TOPAZ [Ger. *Topas*, Fr. *Topase*]. The colour of this stone is various. (1.) Red topaz, of a red colour, inclining to yellow, called Brazilian, or occidental ruby. (2.) Yellow topaz, of a golden yellow colour, and sometimes also nearly white. (3.) Saxon topaz. It is of a pale wine yellow colour, and sometimes greyish white. (4.) Aigue marini, of a bluish or pale green colour. (5.) Occidental sapphire, of a blue colour, and sometimes white. The topaz is found in several parts of the East Indies, in Ethiopia, Arabia, Peru, and Bohemia. The Oriental topazes are most esteemed whose colour borders on the orange; those of Peru are softer, but their colour is much the same.

TORTOISE-SHELL, the shell of the testaceous animal called the tortoise, used in inlaying and in various other works, as for snuff-boxes, &c. The best shell is thick, clear, transparent, of the colour of antimony, sprinkled with brown and white.

TOUCH-STONE [Ger. *Probierstein*, Du. *Tots-steen*, Da. *Provesteen*, Sw. *Proberstein*, Fr. *Pierre de touche*, It. *Pietra di paragone*, Sp. *Piedra de toque*, Port. *Pedra do tocar*]. The black basalt is used for examining the precious metals by the touch, and hence it has obtained the name of touch-stone.

TOW [Ger. *Heede, Werg*, Du. *Hede*, Da. *Blaar*, Sw. *Blår*, Fr. *Etoupe*, It. *Stoppa*, Sp. *Estopa*, Port. *Estopa, Sacudura*, Rus. *Pakla*, Pol. *Zgrzebie*], flax or hemp, beaten and combed into filaments. It is here to be observed that the flax and hemp used for this purpose are but the refuse of such parts of those articles as are employed in the manufacture of cloth, &c., tow being principally applied to the caulking of ships, and to such like coarse purposes.

TRAIN-OIL [Ger. *Thran*, Du. *Thraan*, Da. and Sw. *Tran*, Fr. *Huile de poisson*, It. *Olio di pesce*, Sp. *Grasa, Aceite de pescado*, Port. *Azeite de peixe*, Rus. *Salo worwannoe, Worwan*, Lat. *Oleum piscinum*], a general name for different sorts of fish-oil, such as whale, seal, cod, pilchard oil, &c.

TRAM, in weaving silk, is formed by twisting two or more threads of raw silk slack, which is also called the shoot, and forms the breadth of the piece.

TRANSITU, STOPPAGE IN. Where a person has consigned goods by land or water carriage to another, who may be in insolvent circumstances, the consignor, or the person sending the goods, may countermand their delivery, and *stop them in their passage*, which is termed *stopping in transitu*.

TURKEY (*Osmanli Vilayeti*) comprises large tracts of contiguous territory in Europe, Asia, and Africa. The immediate possessions of this empire are bounded by Austria, Servia, the Danubian Principalities, Russia in Europe, the Black Sea, the Russian Transcaucasian provinces, Persia, the Persian Gulf, Arabia, the Mediterranean, the Archipelago, Greece, the Ionian Sea, the Adriatic, and Montenegro. In European Turkey there are 12 eyalets, 43 sandjaks, and 376 cazas; in Asiatic Turkey, 22 eyalets, 78 sandjaks, and 858 cazas. Turkey in Africa, 3 eyalets. *Territorial divisions. Europe*. Adrianople, pop. 1,600,000; Bosnia, 1,100,000; Constantinople, 2,000,000; Danube, 3,500,000; Salonica, 1,312,974; Scutari, 150,000; Uscub (pop. not given); Iannina, 707,000: total, 12,787,000. *Asia*. Aiden, Smyrna (—); Adana, 983,000; Aleppo (—); Angora (—); Archipelago (—); Bagdad (—); Castambol (—); Crete, 280,000; Erzeroum (—); Hédjaz (—); Hondavendighiar (Broussa), 1,060,188 Konia (—); Kourdistan (—); Sivas (—); Syria, 1,000,000; Mount Lebanon, 110,000; Trebizonde, 892,000: total, 17,163,000. *Africa*. Tripoli, 750,000; grand total, 30,700,000. *Area* 1,812,948 English square miles. *Principal*

cities. Constantinople, Adrianople, Salonica, Buckarest and Sophia, all of them having 100,000 inhabitants, and two upwards of 100,000. Asiatic Turkey has two cities, Smyrna and Damascus, with a pop. above 100,000. Scutari, Broussa, Afioom, Aleppo, Kutaieh, Bagdad, and Bassorah have each over 50,000; seventeen other towns have between 20,000 and 50,000, and twenty-seven between 10,000 and 20,000. *Minerals.* In European Turkey no coal has been found, but iron of the best quality is abundant. Argentiferous lead ore exists in considerable quantities; copper, sulphur, salt, alum, and a little gold are found. In Asiatic Turkey there are copper, lead, alum, silver, sulphur, &c. *Agriculture.* Maize is cultivated in the South; rice, cotton, rye, and barley in the central provinces; and wheat, barley, and millet in the north. Mesopotamia abounds in dates, and in wheat, barley, rice, maize, tobacco, hemp, flax, and cotton. The maritime provinces of Albania are favourable to the growth of the olive, orange, citron, and vine, as well as the peach, plum, and other fruit-trees. But agriculture is in a low state, and the implements and culture are of the rudest description. Notwithstanding their imperfect cultivation, the crops of grain, rice, cotton, tobacco, &c., owing to the fertility of the soil, are very large, yielding from 25 to 100 fold. The olive is largely cultivated for food and for oil, and the grape, date, orange, and citron yield abundant returns. *Manufactures of the empire*, are comparatively few and simple. Wax, raisins, dried figs, fig paste, olive oil, silks, red cloth, goat-skins, morocco of excellent quality, saddlery, shawls, swords of superior workmanship, fire-arms, copper and tin utensils, carpets, dye stuffs, embroidery, &c. *Commerce.* The two staple exports are corn and cotton; then follow silk, tobacco, wool, goat's hair, wax, sponge, honey, dye stuffs, opium, madder, gall-nuts, gums, dried fruit, olive oil, carpets, &c. The corn exports of 1870 amounted to £3,608,609, of which amount £142,559 was for wheat, £131,440 for barley, £3,322,430 for maize, and £12,180 for other kinds of corn and grain. The exports of corn and grain to the United Kingdom amounted to £2,115,868 in 1866, to £1,940,084 in 1867, to £2,666,621 in 1868, to £4,104,247 in 1869, and to £3,608,609 in 1870. The exports of raw cotton, which amounted to £1,560,968 in 1864, sank to £1,237,385 in 1865, to £549,095 in 1866, to £506,972 in 1869, and to £371,918 in 1870. *The imports* are manufactured goods of all kinds, glass, pottery, arms, paper, cutlery, steel, amber, &c. "The most important article of British imports is manufactured cotton. The imports of cotton and cotton yarn amounted to £4,468,087 in 1864, to £4,275,253 in 1865, to £5,232,433 in 1866, to £4,468,050 in 1867, to £3,584,779 in 1869, and to £4,476,152 in 1870. There are a few spinning factories.

Year.	Factories	Reels.	Production.		Value per lb.	Total Value of Production.
			All kinds.	Factory.		
			lb.	lb.	£ s. d.	£
1846	2	120	952,000	7,560	0 16 4	777,450
1847	3	240	1,008,000	16,800	0 16 9	844,200
1848	4	320	840,000	36,000	0 11 4	476,000
1849	8	600	980,000	67,200	0 15 6	759,500
1850	11	780	1,009,000	87,500	0 18 2	909,150
1851	15	910	896,000	103,000	0 19 5	869,340
1852	21	1,230	1,070,000	172,000	0 19 6	1,053,325
1853	25	1,345	840,000	188,000	1 1 5	899,500
1854	..	..	990,000	196,000	1 2 9	1,120,500
1855	29	1,610	476,000	230,000	1 2 8	539,470
1856	53	2,200	1,175,000	322,000	1 3 4	1,370,800
1857	64	2,788	806,000	406,000	1 4 9	997,472
1858	82	3,712	532,000	400,400	1 6 0	691,600
1859	..	..	392,000	313,600	1 7 2	532,460
1860	..	..	425,000	330,500	1 10 6	648,325
1861	88	4,185	658,000	518,000	1 5 4	833,460
1862	90	4,345	428,000	361,500	1 2 7	483,280
1863	..	..	616,000	399,600	1 11 2	951,440
1864	..	..	434,000	326,424	1 13 0	716,100
1865	..	..	280,000	280,000	1 12 0	448,000
1866	..	..	336,000	308,000	1 14 4	576,000
1867	..	..	364,000	336,000	1 14 0	618,300
1868	..	..	308,000	200,000	2 2 2	649,372
1869	..	..	288,000	268,000	1 15 6	511,200
1870	..	..	320,000	294,000	1 11 0	480,900
1871	..	..	337,000	311,000	1 14 0	572,900
1872	..	..	300,000	..	1 15 0	..

The total commerce of Turkey in Europe is estimated at about £30,000,000 annually, but there are no reliable data upon which to base calculations. *Ports*. Constantinople (cap.), *lat.* 41° 0′ N., *long.* 28° 59′ E., is situated at the juncture of the Bosphorus and the Sea of Marmora. The harbour is excellent; it contains sufficient water to float the largest ships, and can accommodate upwards of 1,000 sail. *The other ports* of importance in European Turkey are: Galatz, in Moldavia, on the Danube, and Salonica, in Macedonia; Asiatic Turkey—Smyrna, on the west coast of Asia Minor, Trebizonde, on the Black Sea, and Beyrout, in Syria. *Money*. Gold, the juslik, sarra juslik (yellow piece) or piece of = 100 piastres = 7·216 grammes = francs, 22·50. The ellilik or piece of = 50 piastres = 0·722 grammes = francs 11·25. *Silver*. The medjidie = francs 4·555. The dulik, or piece of = 10 piastres = francs 2·276. The Bechlik = francs 1·138. The Ickilik = francs ·443. *Copper*. The bech paras = francs 0·227; the bir para = francs 0·005. Large payments are made by the kitze, or purse of gold = 30,000 piastres, and the kis or purse of silver of 500 piastres. *Weights and Measures*. 176 drams = 1 rottollo; 2·272 rottoli = 1 oke; 6 okes = 1 batman; 7½ batmans = 1 quintal or cantaro = 124·437 lb. avoir. The quintal of cotton = 127·2 lb. avoir; the halebi or long pik, used in measuring silks and woollens = 28 inches; the endese or short pik, for measuring cotton, carpets, &c. = 27 inches. Oil and other liquids are sold by the alma or meter = 1 gall 3 pints English measure. Corn is measured by the kisloz or killow = 0·941 of a Winchester bushel.

Turpentine [Ger. *Turpentin*, Du. *Terpentyn*, Dan. and Sw. *Terpentin*, Fr. *Terebinthine*, It. and Sp. *Trementina*, Port. *Terebenthina*, Rus. *Skipidar*, Pol. *Terpentyna*, Lat. *Terebinthina*], a resinous juice extracted from several species of trees. The true turpentine-tree is found in Spain and the southern parts of France. It is a middling sized evergreen, with leaves like those of the bay. It is extremely resinous, and unless the resin is discharged, it decays, produces fungous excrescences, swells, bursts, and dies: the prevention of which consists wholly in plentiful bleeding, both in the trunk and branches. The juice is the Cyprus, or Chio turpentine of the shops. This sort is quite of a thick consistence, of a greenish colour, clear and transparent, and of scarcely any taste or smell. The kind now called Venice turpentine is no more than a mixture of eight parts of common yellow or black resin with five parts of oil of turpentine. This has a strong smell, and a hot, disagreeable taste; it is less viscid than any of the other turpentines, and generally of a clear whitish or yellowish cast. The Strasburg turpentine is extracted from the silver fir. It possesses an agreeable aromatic odour, and an uncommonly bitter taste, is neither so thick as the former species, nor so thin as the latter, but it is clearer and less tenacious than either, being commonly of a yellowish brown colour; it is imported from Germany. The common turpentine is prepared from different sorts of pine, and is quite thick, white, and opaque.

U

Ultramarine is a very fine blue powder, made from the Lapis Lazuli, and highly prized by painters. Owing to the high cost of Lapis Lazuli, this pigment is now artificially imitated in various ways.

Umber, an ore of iron and manganese, employed as a brown pigment. It occurs in beds with brown jasper, in the Isle of Cyprus.

Umbrellas are well known articles employed as a covering against rain and the heat of the sun, a smaller kind, the parasol, being used chiefly by ladies, either while walking or riding in open conveyances. Umbrellas are extensively made in London and Birmingham. They are of Asiatic origin. The *kittisol*, or paper summer-head, is extensively manufactured in China, whence it is largely exported to various parts of the world. The umbrella of the Lepcha of Sikhim consists of a framework of bamboo enclosing broad leaves.

Umpire, a third person chosen to decide a disputed question, when two arbitrators cannot agree.

United Kingdom of Great Britain and Ireland. Under this head are included England, Wales, Scotland, and Ireland; also the islands of Guernsey, Jersey, &c., and Man. *Area*. 77,513,583 stat. acres. *Pop*. 31,817,108. *Colonies and foreign possessions* in addition to the home territories. *Europe*. Gibraltar, Heligoland, and Malta. *Asia*. The British possessions are divided into three Presidencies,—Bengal, which includes almost the whole valley of the Ganges, the Punjaub, Oude, Assam, Aracan, the Tenasserim provinces, and a considerable extent of country on both sides of the Bay of Bengal and on the Malay Peninsula. Madras, which includes the Circars and the Carnatic, Canara, and Malabar. Bombay, which includes Scinde, Concan, part of Aurungabad, and several others of the old western divisions of Hindoostan. Total of British India, area 988,091 square miles, pop. 155,348,090. Straits Settlements, 1,095 square miles, pop. 282,831. *Native States* occupy an area of 690,697 square miles, pop. 47,909,199: the principal are the Dominions of the Nizam; those of the Guicowar of Bareda; those of Scindia and Holkar, and the possessions of the Rajah of Travancore. *Ceylon*, 24,454 square miles, pop. 2,096,777. Hong Kong and Labuan, besides several groups of small islands. *Australasia*. Area 2,582,070 square miles, pop. 1,683,707. *Africa*. Cape Colony, area

200,610 square miles, pop. 566,158. Natal, area 16,145 square miles, pop. 315,250. St. Helena, area 47 square miles, pop. 6,860. Gold Coast, area 6,000 square miles, pop. 151,346. Sierra Leone, area 468 square miles, pop. 55,374. Gambia, area 21 square miles, pop. 6,939. Total, 223,291 square miles, pop. 1,101,927. *Mauritius.* Area 708 square miles, pop. 322,917. *North America.* Ontario and Quebec, area 331,280 square miles, pop. 3,201,351. New Brunswick, area 27,037 square miles, pop. 302,950. Nova Scotia, area 18,671 square miles, pop. 375,511. Prince Edward Island, area 2,173 square miles, pop. 93,338. Newfoundland, area 40,200, pop. 146,536. British Columbia, area 200,000 square miles, pop. 34,816. Manitoba, area 13,000 square miles, pop. 17,000. Total area 632,361 square miles, pop. 4,171,502. *West Indies.* Bahamas, area 3,021 square miles, pop. 35,487. Turk's Island, pop. 4,372. Jamaica, area 6,400 square miles, pop. 441,264. Virgin Islands, area 57 square miles, pop. 6,051. St. Christopher, area 103 square miles, pop. 24,440. Nevis, area 50 square miles, pop. 9,822. Antigua, area 183 square miles, pop. 37,125. Montserrat, area 47 square miles, pop. 7,645. Dominica, area 291 square miles, pop. 25,666. St. Lucia, area 250 square miles, pop. 29,510. St. Vincent, area 131 square miles, pop. 31,755. Barbadoes, area 166 square miles, pop. 152,727. Grenada, area 133 square miles, pop. 36,672. Tobago, area 97 square miles, pop. 15,410. Trinidad, area 1,754 square miles, pop. 84,438. British Guinea, area 76,000 square miles, pop. 155,026. Total area 88,683 square miles, pop. 1,097,419. *Bermuda.* Area 24 square miles, pop. 11,796. *Honduras.* Area 13,500 square miles, pop. 25,635. *Falkland Islands.* Area 7,600 square miles, pop. 690. Grand total of the colonies and dependencies, 4,556,317 square miles, pop. about 168 millions. MINERAL PRODUCE OF THE UNITED KINGDOM. Coal, iron, copper, and lead have been notised under their respective headings. Lead and silver are obtained from the same ore in Palæozoic districts all over the country. The most productive English mines are in Northumberland, Durham, Cumberland, York, and Derby, in Shropshire, Cornwall, and Devon. Zinc is obtained from Cornwall and Devon, Cardigan and North Wales, Derby, Cumberland, and the Isle of Man. Sulphur ores are raised chiefly in Cornwall; also in the same county small quantities of arsenic, manganese, gossan nickel, silver, copper, fluor spar and wolfram. Salt is produced in Cheshire and Worcestershire. The total value of coal and metals produced from 1855 to 1868 was:—In 1855, £20,579,001; 1856, £31,441,522; 1857, £30,329,513; 1858, £29,105,719; 1859, £31,680,581; 1860, £34,001,323; 1861, £34,602,853; 1862, £34,691,037; 1863, £37,364,435; 1864, £39,479,837; 1865, £40,584,846; 1866, £40,345,945; 1867, £41,312,158; 1868, £41,521,705. AGRICULTURE. The soil is almost exclusively devoted to the production of breadstuffs for the population, and grass, roots, &c., for domestic animals. A classification of the holdings shows that in England, out of a total of 393,569 holdings, 213,626, or 54 per cent., do not exceed 20 acres; in Wales, out of a total of 55,978, 27,185, or 48 per cent., do not exceed 20 acres; and in Scotland, out of a total of 79,603, 45,434, or 57 per cent., do not exceed 20 acres. In Ireland, out of a total of 594,341 holdings, 172,040 do not exceed 15 acres. The total acreage returned for the United Kingdom as under all kinds of crops, bare, fallow, and grass, in 1870, was 46,177,370 acres, against 46,100,153 in 1869. Of the total acreage in 1870, Great Beitain had 30,407,579 acres; Ireland, 15,652,578 acres; and the Islands, 117,213 acres. In Great Britain the land was divided between tillage and permanent pastures in the proportion of 18,334,723 acres, or 60 per cent., for tillage, and 12,972,856 acres, or 40 per cent., for permanent pastures; in Ireland, 3,661,610 acres, or 36 per cent., were under tillage, and 9,990,968 acres, or 64 per cent., were under permanent pasture; and in the Islands, 95,742 acres, or 81 per cent., were under tillage, and 21,471 acres, or 19 per cent., under pasture. In 1870 the United Kingdom had a total acreage under *corn crops* (including beans and peas) of 11,755,053, of which 9,548,841 acres were in Great Britain, 2,173,109 in Ireland, and 33,903 in the Islands. Under *green crops* (including potatoes), the total acreage for the United Kingdom was 5,017,135, of which 3,586,730 acres were in Great Britain, 1,498,719 in Ireland, and 21,686 in the Islands. Under *bare fallow* the total for the United Kingdom was 630,294 acres, of which 610,517 were in Great Britain, 19,054 in Ireland, and 723 in the Islands. Under *clover* and other kinds of seed grasses in rotation, the total returned for the United Kingdom was 6,320,126 acres, of which 4,504,884 were returned for Great Britain, 1,775,835 for Ireland, and 39,407 in the Islands. Of the total *corn* crops of the United Kingdom 3,773,663 were under wheat, 2,623,752 under barley, 4,424,536 under oats, 74,527 under rye, 539,968 under peas. Of the *green* crops, potatoes were grown to the extent of 1,639,296 acres; mangold, 332,409; turnips, 2,559,629; carrots, 19,925; cabbages, kohl-rabi, and rape, 189,344; and vetches, lucerne, and other green crops, 366,532. *Live Stock.* The total number of each kind in the United Kingdom in 1870 was about 2,580,000 horses, 9,235,000 cattle, 32,786,000 sheep, and 3,650,000 pigs. Great Britain possessed about 2,050,000 horses, 5,403,000 cattle, 28,397,000 sheep, and 2,171,000 pigs. Ireland possessed about 530,000 horses, 3,796,000 cattle, 4,333,000 sheep, and 1,459,000 pigs. The *English counties* may be divided into grazing and corn districts. The grazing or Western division includes Northumberland, Cumberland, Durham, Westmoreland, York, Lancaster, Chester, Derby, Stafford, Leicester, Salop, Worcester, Hereford, Monmouth, Gloucester, Wilts, Dorset, Somerset, Devon, and Cornwall. The corn growing or Eastern division includes York, Lincoln, Nottingham, Rutland, Huntingdon, Warwick, Northampton, Cambridge, Norfolk, Suffolk, Bedford, Bucks, Oxford, Berks, Hants, Hertford, Essex, Middlesex, Surrey, Kent, and Sussex. The corn crops occupy 24 per cent. of the acreage in the grazing counties, against 41 per cent. in the corn division. Permanent pasture (not for hay) in 1870 covered 38 per cent. of acreage in the grazing counties, against 21 per cent. in the corn counties. The acreage under wheat and barley in proportion to the total for England was 40 and 38 per cent. in the grazing, against 60 and 62 per cent. in the corn counties. Potatoes were grown to the extent of 60 per cent. of the total acreage of the crop in England in the grazing, against 40 per cent. in the corn counties. In England the best wheat, as well as the greatest quantity, is raised in Essex, Kent, Herts, Berks, Hants, Hereford, Suffolk, and Rutland. The average produce varies in these counties from 26 to 40 bushels per acre. In *Scotland*, except in the S.E. counties, oats are grown in far greater quantities than any other kind of grain; the produce varies from 30 up to 75 bushels an acre. Potatoes and turnips are cultivated throughout the west parts of the Lowlands. The dairy produce comes principally from the shores of Ayr and Renfrew. In *Ireland* the estimated produce per statute acre of the principal crops were as follows:—

Crops.	Produce per Acre.		Increase or Decrease in 1868.	
	1867	1868	Increase.	Decrease.
Wheat in cwts. ..	11·7	13·9	2.2	—
Oats ,, ..	12·5	12·5	—	—
Barley ,, ..	15·7	17·1	1·4	—
Bere ,, .	15·5	16·2	·7	—
Rye ,, ..	10·2	10·9	·7	—
Potatoes in tons.	3·1	3·9	·8	—
Turnips ,,	11·6	11·0	—	0·6
Mang. Wurz. ,,	12·7	12·9	0·2	—
Cabbage ,,	9·4	9·7	0·3	—
Flax, stns. of 14lb.	22·4	19·4	—	3·0
Hay in tons	1·9	1·7	—	0·2

"Ireland, on the whole, is much better adapted for grazing than for agriculture; and such, in this respect, is the excellence of the soil, that in most parts it never fails, however foul and exhausted, when laid down to grass, speedily to clothe itself with a rich and luxuriant cover of herbage. The natural effect of this has been that Ireland has chiefly become a grazing country." *Fisheries.* Of about 170 species of fish which frequent the coasts, rivers, and lakes, the chief are the herring, pilchard, mackerel, sprat, cod, and salmon. The sea fisheries are chiefly of cod, mackerel, oysters, and lobsters. The fisheries constitute a very important branch of Scottish industry. Fishing is now chiefly carried on in the Tweed, Forth, Tay, Dee, Don, Fiadhorn, Spey, Ness, and other rivers on the East coast. The herring fishery has long been carried on with success, on a large scale, and the Scotch herrings are considered equal to those of any other country. Among the fisheries in Ireland, the principal are salmon and herring. *Industries of England.* The most important is that of cotton. The principal seats of this manufacture are Lancashire, Cheshire, Derbyshire, and Yorkshire. The values exported in 1867, 1868, and 1869, were:—Cotton yarn, £14,871,617, £14,714,899, and £14,157,513 respectively; piece-goods, white and plain, £33,739,062, £31,331,292, £30,530,220; piece-goods, printed, checked, or dyed, £19,389,101, £18,933,824, £19,872,518; other kinds, £2,837,203, £2,706,757, £3,098,813. Total of cotton manufactures, £55,965,366 in 1867, £52,971,873 in 1868, and £53,001,553 in 1869. "Nearly two millions" of people are supported by spinning and weaving cotton, and the different supplementary employments of the trade; and fabrics of great beauty and excellent quality, which a few years ago were out of the reach of all except the wealthy, have been so much reduced in price as to be within the command of the poorest. Of this gigantic manufacture, Manchester is the grand centre, absorbing, with its neighbourhood 10 miles round, fully three-fourths of the trade, and comprising, besides spinning mills, most extensive power-loom factories, and large dyeing and printing establishments. The chief *Woollen and Worsted* manufactories are in Yorkshire, Lancashire, and Gloucestershire. The raw material is mostly of domestic growth, though for some years past large quantities have been imported from the Australian colonies. The Yorkshire clothing district extends, from north to south, about 40 miles; its mean breadth is about 20 miles; so that it occupies an area of about 800 square miles; it includes the large manufacturing towns of Leeds, Huddersfield, Bradford, Halifax, and Wakefield. Leeds is now regarded as the first town in England for the extent and variety of its manufactures of wool; its chief trade is in the middle and lower qualities. There are manufactured extensive assortments of woollen cloths, in fine, middle, and low qualities, cloakings, beavers, mohairs, doeskins, cassimeres, cashmerettes, tweeds, and pilot cloths. Huddersfield and its neighbourhood rank next to Leeds in importance, and supply a great quantity and variety of goods. At this town are made fancy trouserings, besides broadcloths; but the productions of Huddersfield are chiefly for home consumption, and of the middle and lower qualities. Leeds is the great mart for coloured or *mixed* cloths, as they are called, which are wholly made of dyed wool, and *white* broadcloths. *Flannels* or baizes are made in and near Halifax, and also army cloth. The blanket and flushing trade is carried on in the district between Leeds and Huddersfield. Worsted spinning is extensively carried on at Bradford and stuffs are made in its vicinity, and also a

Halifax and Leeds. Narrow cloths are made in or near Huddersfield. Broadcloths and cassimeres are made at Saddleworth. Dewsbury is the chief seat of the shoddy trade. *Hardware Manufactures.* The great centres are Birmingham and Sheffield, the former having workshops of iron, steel, copper, and brass, and the latter being famous chiefly for cutlery, agricultural implements, grates, fire-irons, &c. The making of linen is carried on to some extent in Leeds, and the counties of Lancaster, Dorset, Durham, and Salop. *Silk Manufacture.* The chief seats are:—For broad silks, Spitalfields, Macclesfield, and Manchester; for crapes, Middlesex, Somerset, Suffolk, and Norfolk; for handkerchiefs, Manchester and Macclesfield; for mixed goods, Manchester and Norwich. This manufacture made great progress under the tariff of 1826, before which date it was unable to compete with the opposition of France and Italy. This branch of trade is now of immense importance, both as regards the value and quantity of the goods produced and the extent of the markets opened for their sale and consumption. The manufacture of *Leather* ranks next in importance to that of cotton and of wool, and is probably equal to that of iron. For a long time Bermondsey was the principal seat of the leather manufacture in England; its manufactories are still extensive, but near most of the large towns throughout the country there are tanyards. It is calculated that 50,000,000 lb. of leather are made annually. *Paper Making* is carried on extensively in Kent, the country round London, Lancashire, Yorkshire, and Durham. The vast number of establishments engaged in the book and newspaper publishing business gives a strong impulse to the manufacture of paper, the quantity of which made annually in England is estimated at about 130,000,000 lb. a year. Distilling is carried on to a smaller extent than in Scotland and Ireland, but the breweries are very numerous, and many of them on the largest scale. Shipbuilding is also a prominent branch of industry. The other manufactures comprise glass, hats, pottery, soap, lace, &c. *Industries of Scotland.* A large part of the population is employed in the coal and iron mines. There are upwards of 400 coal mines in the counties of Lanark, Ayr, Fife, Clackmannan, Haddington, Edinburgh, Linlithgow, Stirling, Dumbarton, Renfrew, Dumfries, Peebles, and Perth, and the number of persons employed in them amount to about 35,000. The linen manufacture was the earliest, and, until lately, the most important, branch of the manufacturing industry of Scotland. Its principal seats are Dundee, Kirkcaldy, Arbroath, Forfar, Montrose, Aberdeen, and Dunfermline. In recent years the cotton manufacture has excelled that of linen in extent and value. Its principal seats are in the counties of Lanark and Renfrew, and it all centres in or is dependent upon Glasgow. The woollen manufacture, though less considerable than either the linen or the cotton, is more widely diffused, being carried on in 24 of the 33 counties. The cloth made is chiefly of a coarse kind, and the principal seats of the manufacture are Galasheilds, Hawick, Paisley, Bannockburn, Stirling, Kilmarnock, Jedburgh, and Aberdeen. A manufacture of silk is carried on at Paisley and Glasgow. Whisky and ale are made in considerable quantities, the former in the West Highlands, and the latter in Edinburgh. The most important manufactures besides those already mentioned are leather, soap, earthenware, glass, hardware, hats, and combs. Shipbuilding is extensively carried on at the chief ports, and steam-boats, of iron and wood, steam-engines, and every other kind of machinery, are made in great quantities, especially on the Clyde. *Industries of Ireland.* The linen manufacture is the most important branch of Irish industry. The spinning-wheel of the Irish cottier gave place to the spindle in the early part of this century, when the first flax-spinning machinery was erected. There were 1,542 mills for scutching flax in 1868, being an increase of two over the number in the previous year; 1,420 of those mills were in Ulster, 47 in Leinster, 41 in Munster, and 34 in Connaught. One of the chief seats of the linen manufacture is Belfast. The export of this article is valued at about £5,000,000. The silk manufacture, which was introduced into Dublin by French emigrants at the end of the seventeenth century, is unprofitable; almost the only branch now flourishing is a fabric of mixed worsted and silk, known as Irish poplin. Lace is made to some extent in Limerick. Great progress has been made within the last 10 years in the manufacture of embroidered muslin. The chief seat of this industry is in Glasgow; but while the initiatory and concluding manipulations connected with it are almost wholly performed in that city and its neighbourhood, the needlework, though partly wrought in Scotland, is chiefly executed by the peasantry of Ireland. COMMERCE OF THE UNITED KINGDOM. *Imports.* The total amount for 1871 was £331,015,480. *Exports of British Produce*, £223,066,162. *Exports of Foreign and Colonial Produce*, £60,508,538. *Total Imports and Exports*, £614,590,180. The total imports for 1870 amounted to £303,257,494: in 1871, to £331,015,480. The total imports and exports in 1870 amounted to £547,338,070: in 1871, to £614,590,180. The principal articles imported are cotton, corn, sugar, wool, silk manufactures, and tea, which represent in value about one-half the total imports. The principal articles of home produce exported are cotton, woollen and linen fabrics, iron, coal, and machinery, which represent in value about two-thirds of the total exports. The United States is the only power capable of rivalling the magnitude of British trade, and then only in certain parts of the world. The situation of the kingdom is in the first degree favourable for commercial pursuits and enterprise; the hardihood and industry of its people have turned natural advantages to a good account, and there is no part of the earth accessible to British merchants with which the kingdom has not established business relations. With Ireland, England has a trade in grain and provisions in exchange for manufactured goods; from North Europe she receives timber, iron, flax, hemp, pitch, tallow, potash, and wheat; from Central Europe, agricultural produce, silk, linen, lace, gloves, timber, flax, wine, and gin; from South Europe, wine, brandy, fruits, drugs, silk, &c.; from the United States, cotton, tobacco, rice, and flour, the imports thence being considerably inferior in value to the exports thither; from South America, hides, skins, indigo, cochineal, and bullion; from Asia, tea, coffee, sugar, indigo, drugs, cotton, piece-goods, and ivory. Manufactured goods are the staples furnished by England in exchange for all these commodities. *The number and tonnage of registered sailing and steam vessels of the United Kingdom employed in the Home and Foreign trades respectively. Home trade*, 1869. Sailing vessels, 11,576; tons, 776,683; men, 39,481. Steam vessels, 751; tons, 161,914; men, 10,049. Total vessels, 12,327; tons, 938,687; men, 49,530. *Partly in home and partly in foreign trade.* Sailing vessels, 1,617; tons, 288,849; men, 10,265. Steam vessels, 164; tons, 73,964; men, 3,048. Total, vessels, 1,781; tons, 362,813; men, 13,313. *Foreign trade.* Sailing vessels, 6,963; tons, 3,611,743; men, 102,440. Steam vessels, 810; tons, 640,080; men, 30,207. Total, vessels, 7,773; tons, 4,251,823; men, 132,647. *Grand total*, vessels, 21,881; tons, 5,553,323; men, 195,490. *Royal Mint.* The amount of gold, silver, and copper moneys coined in 1868 was: *Gold*, £1,653,384; in 1869, £7,372,204. *Silver*, 1868, £301,356; in 1869, £76,428. *Copper.* In 1868, £16,328; in 1869, £20,832. Total, 1868, £1,971,068; in 1869, £7,469,464. *Bank of England.* In December, 1869, the liabilities were: *Notes in circulation*, £23,910,000. *Deposits*, £21,305,000. *Total*, £45,215,000. The assets were: *Securities*, £32,373,000. *Bullion*, £18,827,000. *Total*, £51,200,000. Average minimum *rate per cent. of discount* charged by the Bank in 1862, 2½ °/o; 1863, 4½ °/o; 1864, 7⅜ °/o; 1865, 4¾ °/o; 1866, 7 °/o; 1867, 2½ °/o; 1868, 2¼ °/o; 1869, 3¼ °/o. Average price per £100 of the *Three per Cent. Consolidated Stock* of the public funds of the United Kingdom in each year, from 1862:—1862, 93; 1863, 92¾; 1864, 90¼; 1865, 89⅝; 1866, 88; 1867, 93; 1868, 93⅛; 1869, 92⅝. *Railways.* The total length, capital, passengers conveyed, receipts, and working expenses of railways of the United Kingdom in each of the five years, from 1867 to 1871:—

Years.	Length of Lines opened at the end of each year.	Total Capital (paid up Shares and Loans) at end of each year.	Number of Passengers conveyed, exclusive of Season Ticket Holders.		Traffic Receipts.	
	Miles.	£	Total No.	No. per Mile.	Total.	Per mile.
1867	14,247	502,262,887	287,807,904	20,201	£39,479,999	£2,771
1868	14,803	511,680,855	304,136,334	21,961	40,912,534	2,875
1869	15,145	518,779,761	305,664,255	20,189	42,695,321	2,722
1870	15,537	529,908,673	330,004,398	21,518	45,078,143	2,794
1871	15,750	552,680,107	375,220,754	24,025	48,892,780	3,063

There belonged to England and Wales, in 1871, of the total length of lines open, 11,043 miles; to Scotland, 2,538 miles; and to Ireland, 1,988 miles. To the total paid up capital, England and Wales contributed £461,368,616; Scotland, £64,282,911; and Ireland, £27,028,580. In the division of the total traffic receipts, England and Wales took £41,383,065; Scotland, £5,237,389, and Ireland, £2,272,326.

London, the metropolis of the British empire, occupies both banks of the Thames, about 45 miles from its mouth at the Nore, and 15 below the highest tideway. Though chiefly within the county of Middlesex, London includes parts of Surrey and Kent, and extends into Essex. Having immense wealth concentrated in it, having easy access both by land and water to all parts of the kingdom, and every facility of communication with foreign countries, the metropolis has become, with, perhaps, the single exception of New York, the greatest commercial city in the world. As early as A.D. 604 London was described as the "emporium for many nations repairing to it by land and sea." Under the Romans a trade in hides, cattle, tin, lead, &c., was carried on; but it was not until the tenth century that the first settlement of merchants in the city took place. They were the Easterlings, or merchants of the Steelyard, a branch of the famous commercial confederacy first formed on the east shores of the Baltic in the eighth century, for the protection of their interests from the piratical inroads of the Northmen. The reign of Edward III. has been described as "the great dawn of the fine arts and of commerce." He incorporated trading societies in London, the first three being the Goldsmiths, the Merchant Taylors, and the Skinners. During the reigns of the Tudor kings much wealth was accumulated in the City by commerce; and throughout that of Elizabeth trade was one of the main objects of her government. The outbreak of the Civil War occasioned the establishment of banking in London. At the commencement of the reign of Charles II. trade would appear to have been in a very flourishing condition. The East India Company was then carrying on an extensive and lucrative business. Vast quantities of muslins and other choice goods were imported, as even to interfere with the internal manufactures of the country. During the same reign the city lost by fire, in buildings, merchandire, treasure, plate, &c., about 10 millions sterling; yet, so great was the elasticity of its trade that within seven years the whole work of restoration was completed, except St. Paul's. The earlier years of the reign of George II. were very propitious to commerce. The nation having recovered from the effects of the year of speculation, was now pursuing commerce steadily and surely. Money was plentiful, and the rate of interest low. The greater proportion of the commerce of London was at this time carried on by the great companies, such as the East India Company, the Russia Company, the Levant Company, the South Sea Company, the Hudson's Bay Company, &c. The metropolis was, at this time, the great European mart for diamonds and other precious stones. At the beginning of the reign of George III. the trade of England had reached a very high point, the imports in 1760 being £10,683,595, and exports £15,781,175. In 1784 the imports rose to £15,272,877, and the exports, which had sunk to 10 millions, sprung up to 15½ millions. In 1792 the imports rose to about 20 millions, and the exports to 25 millions; and in 1800 the imports to £30,570,605, and the exports to £43,152,019. "At the commencement of the present century the trade of London is reported "to have been more extensive than at any previous period in the history of England. London carried on one-third of the trade of the empire; and the value of the floating property upon the Thames forming its commerce was estimated at no less than £70,000,000 annually." About this time the shipping interest suffered materially from the crowded state of the river, and the difficulties connected with the berthing and mooring of vessels and the landing and storing of merchandize. These evils led to the construction of the West India Docks, which were opened in August, 1802. These, next to the Commercial Docks, the oldest in London, were formed in the gorge of the Isle of Dogs. The East India Docks, at Blackwall, were finished in 1806. The London Docks, situate between Ratcliff Highway and the Thames, were opened in 1805. The St. Katherine Docks, situate between the London Docks and the Tower, were opened in 1828, and the Victoria, in the Plaistow Marshes, immediately below the East and West India Docks, were opened in 1855. The Commercial Docks, on the other side of the Thames, extend along the side of the river opposite Limehouse, and terminate nearly opposite the entrance to the West India Docks. The principal commerce of London passes through the docks. About 35,000 vessels are engaged in the foreign trade, and about 23,000 in the coasting trade. The imports consist of corn, sugar, silk, wool, wood, oil, tea, wine, spirits, tallow, butter, coffee, &c., and the exports mainly cotton manufactures, woollen fabrics, metals of all kinds, hardware, and Irish produce generally. London cannot be called a manufacturing city; yet the various articles produced in it employ many thousand persons. The principal manufacture is silk, originally introduced by French Protestant refugees. Many of their descendants still continue the trade, which employs about 116,000 persons, mostly females. The manufacture of beer and porter is carried on on a scale of great magnitude. Sugar refining, clock and watch making, the manufacture of mathematical, surgical, and musical instruments, jewellery, gold and silver plate, and other articles are extensively carried on. London-built carriages are generally considered the best, as they are the most elegant, in the world. To give even a sketch of the foreign commerce of London is impossible in our space. It would be an epitome. To this port are brought the products, natural and artificial, of all soils and all climates. It has in store whatever the ingenuity and industry of man in any part of the globe can spare to exchange for what his own country does not yield; and in its remarkable combination of commercial, manufacturing, and financial activity, London has become the regulator of the money markets of the world. The *Bank of England* is in Threadneedle Street. The *Royal Exchange* between the Bank and Cornhill. *Bankers' Clearing House*, Lombard Street. *The Post Office*, St. Martin's-le-Grand. The *Custom House*, Lower Thames Street. The *Inland Revenue Office*, Somerset House, Strand. *Markets*. The provision markets are ten in number, of which Mark Lane is confined to corn.

Liverpool is a first-class seaport in the hundred of West Derby, on the eastern side of the estuary of the Mersey, in *Lat*. 53° 24′ N., and *Lon*. 2° 59′ 30″ W. It was very early a commercial depôt of importance, being a mart for Irish yarns in the time of Henry VIII. But its real progress commenced in 1709, when an Act was obtained from Government for the construction of a wet dock. From that year its progress in commerce, and in the accumulation of wealth and population have fully kept pace with the progress of manufacturing industry in Lancashire and the northern counties, for the products of which Liverpool is the natural outlet. Besides, the situation of Liverpool renders it a principal seat of the trade between Ireland and Great Britain; and as the population and trade of the former increased it could not fail proportionably to increase the trade of this port. *Docks*. The line of docks and basins extends along the shore nearly 5 miles, having an aggregate water-area of 245 acres, 1512 yards, and a quay space of nearly 18 miles in extent.

The principal docks are "The Brunswick, Queen's, King's, Albert, Salthouse, Canning, George's, Prince's, Waterloo, Victoria, Trafalgar, Clarence, Nelson, Bramley, Moore, Wellington, Huskisson, Sandon, Canada, Salisbury, Collingwood, and Stanley. The three last are connected with the Leeds and Liverpool canal, and most of the others have half-tide locks and wet basins. There are 18 graving docks, with a total bottom length of 10,593 feet, and 7 gridirons, measuring altogether 1,123 feet 6 inches in length.". Strictly speaking, Liverpool is not a manufacturing town. There are, however, several large sugar refineries, iron and brass foundries, public breweries, roperies, glass-staining and alkali works. Soap making is carried on extensively, also the manufacture of chain-cables, anchors, compasses, &c., and machinery of various kinds. *Shipping.* As a trading port, Liverpool stands far above any port in the United Kingdom, and the value of its exports of British and Irish produce is equal to that of all the other ports put together. As a packet station, Liverpool is of the highest importance. A splendid fleet of its steamships are engaged in the trade to the United States, to the Brazils, and the southern republics, to Spain, Portugal, the Mediterranean, and India. There is also daily communication with many of the chief ports of the Kingdom, and a host of river steamers, tugs, and pilot vessels, in constant employment. To the cotton manufacture this port owes, undoubtedly, much of her wealth and importance. "Being the port through which Manchester, Oldham, Bury, Bolton, Ashton, and other great seats of that manufacture could most conveniently obtain supplies of the raw material, and export their manufactured products, she has increased with every increase in this great department of industry; and it is no exaggeration to affirm that the creative influence of the wonderful inventions of Hargreaves, Arkwright, Crompton, Cartwright, and the other founders and improvers of the cotton manufacture, have been, though not so direct, quite as powerful in the docks of Liverpool as in the mills of Manchester." *The Exchange* is in Dale Street. *The Custom House, Excise, and Post Office* are comprised in a pile of buildings at the south end of Castle Street.

Manchester is in the S. division of the county of Lancaster, 182¼ miles from London. It is the principal manufacturing town in the world. As early as 1352 this city was noted for the manufacture of a fabric from the unprepared fleece. In the seventeenth century the cotton trade began to rise and has gradually progressed, until it has attained its present magnitude. Manchester is its grand centre, as we have already said, and engages in it, not only the manufacturers of Lancashire, but merchants and representatives of merchants from all parts of the world. The principal fabrics made are shirtings, domestics, T-cloths, jaconets, madapollams, twills, Spanish stripes, quilting, figured waistcoatings, sheetings, handkerchiefs, &c. These are made for the markets of India, China, and Japan, N. and S. America, the West Indies, and the Coasts of Africa, Russia, Germany, Italy, Egypt, Turkey, &c. In many of the factories spinning is only carried on, in others both spinning and weaving, and others where the yarn is wove and bleached. In 1870 the total value of cotton, yarn, and fabrics exported amounted to £71,410,131, which raises this industry to the next in importance in the country to that of agriculture. Many other branches of manufacture are carried on, especially silk and mixed goods, small wares, machinery, &c. At present nearly every kind of silk, from the rich brocade to the slight Persian, is made, consuming large quantities of raw material, and employing several thousands of operatives. "The manufacture of machinery, including locomotive engines and tool making, is conducted on a most extensive scale, and is in fact, next to the cotton trade, the most important business in the town. The machinery for carding, spinning, and weaving cotton is all of the most delicate kind, and requires to be adjusted and finished with the greatest care. Steam engines are made of different sizes, varying from 8 to 400 horse-power; and the castings are often of gigantic size, weighing from 30 to 50 tons. The iron plating and rivetting machines are curious specimens of mechanical ingenuity, and have greatly tended to facilitate the manufacture. The increase of wealth in Manchester during the last half century has been quite unprecedented, and it has at present, in proportion to its size, a greater number of opulent capitalists than any other town of the empire. The capital invested in mills, machinery, and docks is immense; and in addition to the vast sums that are thus employed in these peculiar businesses, these capitalists have been the great promoters of railways in all parts of the country, and hold a very large proportion of the stock embarked in these undertakings." *The Exchange* is in St. Anne's Square, at the west end of Market Street; the *Post Office* in Brown Street and the principal *Banks* in King Street and St. Anne's Square. *Market days.* Tuesday, Thursday, Friday, and Saturday. On Tuesday and Friday the manufacturers attend the Exchange, and Saturday is the chief market-day for agricultural produce and provisions.

Glasgow. In point of commercial greatness, Glasgow is considered the second city in the empire. It is in the county of Lanark, on the banks of the Clyde, 397 miles from London, 44 from Edinburgh, 213 from Manchester and Liverpool. Fishing was the earliest branch of productive industry of this port. Cured salmon was exported in large quantities to France, and different French productions were taken in exchange. The commercial prosperity may be dated from its embarkation in the Virginian tobacco trade, and when this trade was interrupted by the war in 1775, the muslin trade was introduced and carried on with surprising vigour. From the introduction of power-loom weaving in 1773, the cotton trade and manufactures in Glasgow largely helped to increase its wealth and advance its greatness. Almost all varieties of textile manufactures are here carried on more or less. Many of the mills are situated on the outskirts of the city, and employ a large number in producing various matters in art and mechanics; textile fabrics and dress, in dealing with animal and vegetable substances, and with minerals. One of the staple trades is that of iron. The city has in relation to it very great advantages, from its close proximity to the iron fields of the north. In the immediate vicinity there are about 140 iron furnaces in blast, producing upwards of 3,000 tons of pig iron daily. In ship-building this port also holds a high place. Its building yards are both numerous and extensive, and the vessels constructed, whether of timber or iron, are celebrated all over the world. The merchants import to a large amount sugars, rum, wines, brandy, timber, cotton, coffee, flour, &c., from Demerara, the Caraccas, Buenos Ayres, the United States, Canada, Novia Scotia, &c. Their commercial transactions likewise extend to the coasts of Africa and Asia, and are of great importance in many of the markets of Europe. Their exportations comprise shawls and every description of cotton goods, silks, glass, soap, whiskey, and the various manufactures of Paisley. The *Exchange* is in Queen Street, and the *Post Office* in George's Square. The *chief market day* for corn and provisions is Wednesday.

UNITED STATES, The. A federal republic occupying more than half the territory of the temperate zone in N. America, lies between 24° 30′ and 49° N. *Lat.*, and between 66° 50′ and 124° 30′ W. *Long.* It has a coast-line of 2,163 miles on the Atlantic, 1,764 miles on the Gulf of Mexico, and 1,343 miles on the Pacific. Alaska, or the territory acquired from Russia in 1867, and sometimes known as North-western America, extends from the S. end of Prince of Wales Island north to Point Barrow. The entire area of the United States is 3,578,392 square miles, or about four-ninths of N. America, and more than one-fifteenth of the land surface of the globe. The area has been acquired as follows;—Territories ceded by England 1783, 815,615 square miles; Louisiana, as acquired from France 1803, 930,928 square miles; Florida, from Spain 1821, 59,268 square miles; Texas, as admitted to the Union 1845, 237,504 square miles; Oregon, as settled by treaty 1846, 280,425 square miles; California, as conquered from Mexico 1847, 649,762 square miles; Arizona (New Mexico), as acquired from Mexico by treaty 1854, 27,000 square miles; Alaska, as acquired from Russia by treaty 1867, 577,390 square miles. *Pop., native born*, 32,989,437; *foreign born*, 5,566,546; *total*, 38,555,983. *Mineral resources*, the, are more varied and extensive than those of any other country in the world. Gold has been found in greater or less quantities in half the States of the Union. Tennessee, Virginia, the Carolinas and Georgia formerly furnished the largest supplies. Now California, Oregon, Washington, Idaho, Nevada, Arizona, New Mexico, Colorado, Montana, Dakota, and Wyoming are by far the most extensive and productive gold fields in America. Much of the immense tract is also rich in silver, copper, lead, and other valuable minerals. Comparatively little of the field has been even prospected, and important discoveries in the Rocky Mountains, the Sierra Nevada, and the Pacific coast range may be looked for for the next 100 years. Early Spanish, Portuguese, and English explorers were all on the look-out for minerals. Huts and utensils, supposed to have belonged to De Soto's party in the sixteenth century, have been discovered among the mountain gold regions of Georgia and the lead mines of Missouri. Previous to 1848 the annual gold product was estimated at about one million dollars, chiefly from Virginia, Tennessee, Georgia, and N. Carolina. Some gold had been known to exist for nearly 300 years, and when Humboldt visited that region he had predicted that large quantities would yet be discovered. The first rich deposits were found in 1848, near the city of Sacramento. By the close of 1850 there were 50,000 miners at work in the State. Silver exists in all deposits of lead ore. It is found in largest quantities in Nevada and Idaho, though some is procured in Arizona, California, Colorado, and New Mexico. Iron is found in every State and territory, and in every form. The great deposits of lead are in Missouri and in half a dozen adjoining counties of Wisconsin, Illinois, and Iowa. Lake Superier is the great copper region, though the metal is found in Connecticut, New Jersey, Virginia, North Carolina, Georgia, Tennessee, and in nearly all new gold-bearing States. Tin exists in Maine and California; zinc in New Jersey, Pennsylvania, and many other States; and quicksilver in California. Vast beds of coal, which are already worked, underlie many of the States east of the Rocky Mountains and portions of Utah, California, and Washington territory. The yield of the precious metals in 1868 was estimated at 66,500,000 dollars. California produced the largest amount, 20,000,000 dollars, and after it came Nevada, 18,000,000; Montana, 12,000,000; Idaho, 6,000,000; Oregon, 5,000,000; and Colorado, 4,000,000. Upwards of 25,000,000 tons of coal were raised in 1867. *Vegetable productions.* Great diversity prevails as regards soil, from the rich alluvions of the Great Mississippi valley to the barren plains of New Mexico, Utah, Oregon, and the Indian territories. Agricultural capabilities of the Mississippi valley are believed to be unequalled on the globe, unless in the valley of the Amazon, in South America. The annual productions of the States are thus estimated;—600,000,000 bush. Indian corn; 147,000,000 bush. oats; 200,000,000 bush. wheat; 6,000,000 bush. barley; 15,000,000 bush. rye; 9,000,000 bush. buck-wheat; 6,000,000 bush. flax seed;

880,000 bush. grass seeds; 70,000,000 bush. of Irish and 39,000,000 bush. sweet potatoes; 10,000,000 bush. peas and beans; 215,000,000 lb. of rice; 200,000,000 lb. tobacco; 990,000,000 lb. cotton; 53,000,000 lb. wool; 315,000,000 lb. butter; 105,000,000 lb. cheese; 4,000,000 lb. hops; 8,000,000 lb. flax; 10,840 lb. silk cocoons; 35,000,000 lb. maple, and 250,000,000 lb. cane sugar; 15,000,000 lb. bees'-wax and honey; 14,000,000 tons hay; 35,000,000 tons hemp; 14,000,000 gall. molasses; live stock valued at 600,000,000 dollars. The greatest amount of live stock was in New York. The greatest *wheat* growing States (in the order named) were Pennsylvania, Ohio, New York, Virginia, and Illinois; *rye*, Pennsylvania, New York, New Jersey, and Connecticut; *Indian corn*, Ohio, Kentucky, Illinois, Indiana, and Tennessee; *oats*, New York, Pennsylvania, Ohio, Virginia, Illinois, Kentucky, and Tennessee; *tobacco*, Virginia, Kentucky, Maryland, Tennessee, Missouri, North Carolina, Ohio; *cotton*, Alabama, Georgia, Mississippi, South Carolina, Tennessee; *wool*, Ohio, Pennsylvania, New York, Vermont, Virginia, and Indiana. The middle and western States are most productive in wheat, rye, and oats; the southern and western in Indian corn; the southern in rice; the territory between 34° and 41° in tobacco. Cotton is wholly produced south of 38°; wool and Irish potatoes mostly N. of 34°; sweet potatoes mostly S. of 40°; barley, apples, and pears, mostly N. of 38°; peaches, mostly S. of 41°; hemp, hops, and flax, N. of 34°; cane sugar, oranges, figs, bananas, S. of 33°. *Manufactures.* There are about 1,700 establishments engaged in the manufacture of cotton, producing 763,000,000 yards of stuffs, and 28,000,000 lb. of yarn; about 1,600 woollen manufactories, producing 82,000,000 yards of stuffs, and nearly 5,000,000 lb. of yarn; 2,190 forges, furnaces, &c., producing 1,165,544 tons of wrought, cast, and pig iron. There were invested in the manufacture of malt and spirituous liquors 8,334,254 dollars, employing 5,487 hands, and consuming 3,787,197 bush. of barley, 11,067,761 bush. of corn, 2,143,927 bush. of rye, 56,517 bush. of oats, 526,840 bush. of apples, 61,675 hogsheads of molasses, and 1,294 tons of hops, producing 1,177,924 barrels of ale, &c., 42,133,955 gall. of whisky and high wines, and 6,500,000 gall. of rum: 6,263 tanneries, producing 12,557,940 sides, and 2,654 skins of tanned leather. The New England States are most extensively engaged in the manufacture of cotton and woollens, and the middle States and Ohio in the manufacture of iron and spirituous and malt liquors. Other important branches of industry are the manufacture of shoes, hats, cabinet-ware and furniture, combs, cutlery, hollow-ware, sugar (refined), agricultural implements, &c., cheap clocks, pottery, glass, chemicals, dye stuffs, locomotives and steam-engines, gas fixtures, &c. *Principal Towns.* The progress of the cities of the United States as a mass has been without a parallel in the history of the world. Some cities in the Old World, favoured by power, may have had for a short period a more rapid rise than those of the American Confederacy, but in the aggregate we have no example of such an amazing extension and growth of towns as this republic exhibits. New York has now a population of 805,651 souls; Philadelphia, 562,529; Brooklyn, 266,661; Baltimore, 212,418; Boston, 177,812; New Orleans, 168,675; Cincinnati, 161,044; St. Louis, 160,773; Chicago, 109,260; Newark, 71,914; Louisville, 68,033; Albany, 62,367; Washington, 61,122; San Francisco, 56,802; Providence, 50,666; Charleston, 40,578. *Ports.* There are 84 distinct ports of entry for foreign merchandise, viz., 57 on the Atlantic, 4 on the Pacific, 8 on the Gulf of Mexico, and 15 on the shores of the great lakes. The principal ports are:—BOSTON, at the western extremity of Massachusetts Bay, lat. 42° 21′ 22″ N., long. 71° 4′ 9″ W.; distant from Washington 464 miles N.E., from New York 236 miles. The harbour opens to the sea between two points, nearly four miles distant from each other—Point Alderton, on Nantasket, and Point Shirley, in Chelsea. It is sheltered from the ocean by the peninsulas of which these two points are the extremities, and a large number of islands, between which are three entrances. The main passage, which is about three miles S.E. from the Navy-yard, lies between Castle and Governor's Island. The foreign commerce of this port has always been great, and extends to almost every nation on the globe. The coast trade is also immense. NEW YORK, the most populous city and the greatest emporium in the New World, is situated on the southern extremity of Manhatten Island, at the junction of the Hudson and East Rivers, about 18 miles from the Atlantic. The city is strongly defended both by nature and art. The entrance to the upper bay is through a strait called the Narrows, about one mile in width, and is commanded on the Long Island side by two forts, one in the water, 500 yards from shore. The harbour is eight miles in length and four or five in breadth, and the largest ships may lie close to the quays. It is as the great centre of commerce for half a continent that New York derives its highest claim to pre-eminence. Surrounded by one of the most capacious harbours in the world, within two hours' sail of the Atlantic, communicating with the New England States by Long Island Sound, and with the interior of New York State by the Hudson River, which is in turn connected with the great lakes by the Erie Canal, it presents facilities for internal and foreign navigation unrivalled by any commercial emporium of this or any other period. Nor have her merchants been satisfied to repose on her natural advantages, but they have connected her with every great point which deposits in her depôts the cotton and rice of the South, the grain, lead, tobacco, and pork of the West, and the wool, wheat, timber, and flour of the North and East. The imports and exports embrace every article that enters into the trade of the Union. PHILADELPHIA, the second city of the States, is situated between the Delaware and Schuylkill Rivers, about six miles above their junction, and 96 miles from the ocean, in lat. 39° 57′ N., and long. 15° 11′ W. The quays on the Delaware are accessible to the largest vessels. This port is chiefly distinguished for its coasting trade, which is extending beyond all parallel. The leading articles of import are cotton, woollen, and silk goods, raw cotton, hides, manufactured iron, molasses, sugar, &c.; and the chief exports are flour, provisions, and manufactures. BALTIMORE is situated on a small bay or estuary, which extends about two miles and a half inland from the north side of Patapsco River, about 12 miles from its entrance into Chesapeake Bay. The bay round which the city is built affords a secure and spacious harbour, and there is communication by railway not only with Philadelphia and Washington, but with Winchester, Annapolis, Cumberland, Frederick City, York, Lancaster, and Harrisburg. CHARLESTON is situated on a tongue of land between the Rivers Ashley and Cooper, which unite immediately below the town and form a commodious harbour, communicating with the ocean at Sullivan's Island, seven miles below. A sand-bar extends across the mouth of the harbour, affording, however, two entrances, of which the deepest, near Sullivan's Island, has 16 feet of water at low tide. The chief exports are cotton and rice. Tobacco and provisions are also exported in considerable quantities. SAVANNAH, in Georgia, is situated on the right bank of Savannah River, 18 miles from its mouth. It is 90 miles W.S.W. from Charleston, and its trade is very similar to that port. MOBILE, the port of entry of Alabama, is on the west bank of Mobile River, immediately above its entrance into the bay of the same name, 30 miles N. from the Gulf of Mexico. Exports, chiefly cotton. NEW ORLEANS is on the left bank of Mississippi, about 100 miles from its mouth. Lat. 29° 58′ N., long. 90° 7′ W. It possesses great natural advantages for internal trade. The Mississippi and its tributaries afford not less than 15,000 miles of navigable waters, communicating with a vast extent of country, illimitable in its resources, exhaustless in fertility, and embracing nearly every variety of climate. The river is very deep at the town. Exports, cotton, corn, sugar, tobacco, and provisions principally; and imports provisions from the Northern States.

IMPORTS AND EXPORTS OF THE UNITED STATES.

Imports of Merchandise.			Exports of Merchandise.			
Years.	Gold Value.		Domestic Produce.		Foreign Produce	Total in Sterling.
			Currency value.	Gold value.	Gold value.	
	Dollars.	£	Dollars.	Dollars.	Dollars.	£
1866....	427,311,198	89,023,166	468,040,903	....	11,341,420	....
1867....	395,761,096	82,450,228	385,746,032	279,378,500	14,719,332	61,270,382
1868....	357,436,440	74,465,925	370,555,738	269,135,537	12,562,999	58,687,195
1869....	417,506,379	86,980,496	371,045,149	275,000,000	10,951,000	59,523,125

The exports consist almost entirely of agricultural produce. Foremost as regards value stand wheat and flour, and then follow cotton, tobacco, pork, butter, and cheese. The imports consist mainly of cotton, woollen, and linen goods, and metals. The total quantities and value of cotton exported, with the average price per lb., in 1866 to 1869, were:—

Years.	Quantities.	Value.	Average price per lb.
	lbs.	dollars.	cents
1866 ..	550,572,829 ..	281,385,223 ..	43'25
1867 ..	661,473,588 ..	201,470,423 ..	30'45
1868 ..	784,763,633 ..	152,820,785 ..	19'47
1869 ..	644,327,921 ..	162,633,052 ..	25 24

Money. Dollars; average rate of exchange 4s. 2d. *Weights and Measures*. Th[illegible]l = 1 Winchester bushel; all others, the same as the English. *Coins*. The standard of both gold and silver coin is nine hundred parts of pure metal and one hundred parts of alloy, by weight, the alloy of the silver coin to be copper, and of gold, copper and silver, the silver not exceeding one-half of the whole alloy. *Gold*. Double eagle, weight 516 gr., value $20; eagle, 258 gr., $10; half eagle, 129 gr., $5; quarter eagle, 64½ gr., $2.50; dollar, 25·4-5 gr., $1. *Silver*. Dollar, weight 412½ gr., value $1; half dollar, 206¼ gr., $0'50; quarter dollar, 103⅛ gr., $0.25; dime, 41¼ gr., $0'10; half dime, 20⅝ gr., $0'5; three-cent piece, [illegible] gr., $0.03. *Copper*. Five-cent piece, w[illegible]t [illegible]16 gr., value $0'05; three-cent piece, 3[illegible] [illegible]two-cent piece, 96 gr.; cent, 48 gr.

LONDON: *Warwick House,*
Dorset Buildings, Salisbury Square.

A LIST OF

WARD, LOCK & CO.'S ILLUSTRATED GIFT BOOKS

STANDARD WORKS,

AND

Popular Volumes for Children,

Suitable for Rewards and Presents.

BEETON'S GREAT BOOK OF POETRY: From Cædmon and King Alfred's Boethius to Browning and Tennyson; with a separate Selection of American Poems. Containing nearly Two Thousand of the Best Pieces in the English Language. With Sketches of the History of the Poetry of our Country, and Biographical Notices of the Poets. NEW EDITION, Illustrated. In One handsome Volume, royal 8vo, cloth gilt, gilt edges, price 21*s.*; or in half-calf, 25*s.*

Four Hundred English Poets are represented in this Volume. A separate collection of American Poems, with Biographies, is added to these. Thus, in one book, a view of the Growth and Changes of the English Language, as seen in its Highest Developments, is possible. Not less than a Thousand Volumes have been examined in order to form a selection worthy to receive respect and regard from all Lovers of the Divine Art of Poesy.

NOBLE THOUGHTS IN NOBLE LANGUAGE: A Collection of Wise and Virtuous Utterances, in Prose and Verse, from the Writings of the Known Great and the Great Unknown. With an Index of Authors. Compiled and Analytically Arranged by HENRY SOUTHGATE, Author of "Many Thoughts of Many Minds," &c. Royal 8vo, cloth gilt, gilt edges, 10*s.* 6*d.*; half-calf, or half-morocco, 15*s.*; elegant morocco, bevelled boards, 21*s.*

Contains Selections from the Works of 700 Authors, and will especially recommend itself to those who can appreciate and value the Best Thoughts of our Best Writers.

DALZIEL'S ILLUSTRATED GOLDSMITH. Comprising "The Vicar of Wakefield," "The Traveller," "The Deserted Village," "The Haunch of Venison," "The Captivity: an Oratorio," "Retaliation," Miscellaneous Poems, "The Good-Natured Man," "She Stoops to Conquer," and a Sketch of the Life of Oliver Goldsmith by H. W. DULCKEN, Ph.D. With 100 Pictures, drawn by G. J. PINWELL, engraved by the Brothers DALZIEL. Beautifully bound, cloth, full gilt, gilt edges, price 10*s.* 6*d.*

BEETON'S BOOK OF ENGLISH POETRY: From Chaucer to Pope. With Biographical Notices of the Poets, and numerous full-page Illustrations. Handsomely bound, cloth gilt, gilt edges, 10*s.* 6*d.*

BEETON'S BOOK OF FAVOURITE MODERN POETS OF ENGLAND AND AMERICA. With Biographical Notices and numerous full-page Illustrations. Handsomely bound, cloth gilt, gilt edges, 10*s.* 6*d.*

SABBATH BELLS CHIMED BY THE POETS. With Coloured and other Illustrations by BIRKET FOSTER and other Artists. Cloth gilt, gilt edges, price 10*s.* 6*d.*

London: WARD, LOCK & CO., Salisbury Square, E.C.

FINE ART BOOKS.

THE DORÉ GIFT BOOK OF ILLUSTRATIONS TO TENNYSON'S IDYLLS OF THE KING. With Descriptive Letterpress and Quotations from Tennyson's Poems, by Permission. In One Magnificent royal 4to Volume, containing 37 Engravings on Steel, from the Original Drawings by GUSTAVE DORÉ. Cloth, richly gilt, gilt edges, price 42*s.*

GUSTAVE DORÉ'S ILLUSTRATIONS TO THE ARTHURIAN LEGENDS. Royal 4to, handsomely bound, cloth, richly gilt, gilt edges, price 12*s.* each.

1. **The Story of King Arthur and Queen Guinevere.** From the Traditions of the Mythical period of British History, Welsh, Breton, Norman, and Italian Chroniclers and Romancists, and later Ballad and Idyllic Poetry. With Nine Engravings on Steel, from Drawings by GUSTAVE DORÉ.
2. **The Story of Merlin the Enchanter and Vivien,** as related by the old British and Breton Chroniclers and in later Poetry. With Nine Engravings on Steel, from Drawings by GUSTAVE DORÉ.
3. **The Story of Enid and Geraint.** From the old Welsh, French, German, and Scandinavian Legends. With Nine Engravings on Steel, from Drawings by GUSTAVE DORÉ.
4. **The Story of Elaine.** From the Arthurian Legends collected by Sir THOMAS MALORY and later Writers. With Nine Engravings on Steel, from Drawings by GUSTAVE DORÉ.

"This edition, although illustrated by the same remarkable drawings of Gustave Doré which originally appeared in the fine, large and costly folio published some years ago, is really a new work, containing much valuable matter referring to the Arthurian legends. . . . As popular gift-books they are precisely what they should be—beautifully printed on the thickest paper, handsomely bound, and moderate in price."—*The Times.*

VIVIEN. By ALFRED TENNYSON, D.C.L. With Nine superb Engravings on Steel from Drawings by GUSTAVE DORÉ. Folio, cloth gilt, gilt edges, 21*s.*

THOMAS HOOD, Illustrated by Gustave Doré. With Nine Engravings on Steel, from Drawings by GUSTAVE DORÉ, and many Woodcuts. Folio, cloth gilt, gilt edges, 21*s.*

THOMAS HOOD, Illustrated by Birket Foster. With Twenty-two Drawings by BIRKET FOSTER, engraved on Steel. Large 4to, cloth gilt, gilt edges, 21*s.*

THOMAS HOOD, again Illustrated by Birket Foster. With Twenty-two Drawings by BIRKET FOSTER, engraved on Steel. Large 4to, cloth gilt, gilt edges, 21*s.*

THOMAS HOOD, Illustrated by Birket Foster. The Two Series in One Volume, handsomely bound, half-morocco, 42*s.* Forty-four Drawings by BIRKET FOSTER, exquisitely Engraved on Steel.

KEATS' POETIC ROMANCE, ENDYMION. Illustrated by E. J. POYNTER, A.R.A. With Six Magnificent Proof Engravings by F. JOUBERT, from Paintings by E. J. POYNTER. Folio, cloth gilt, gilt edges, Proofs, 42*s.*

London: WARD, LOCK & CO., Salisbury Square, E.C.

USEFUL AND ENTERTAINING BOOKS.

DALZIEL'S ILLUSTRATED ARABIAN NIGHTS' ENTERTAINMENTS. With upwards of 200 Illustrations by J. E. MILLAIS, R.A., J. TENNIEL, J. D. WATSON, A. B. HOUGHTON, G. J. PINWELL, and T. DALZIEL, together with Initial Letters, Ornamental Borders, &c., engraved by the Brothers DALZIEL. In One handsome Volume, cloth, richly gilt back, sides, and edges, price 21*s*.

TRAVELS IN PORTUGAL. By JOHN LATOUCHE. Third and Cheaper Edition, with Photograph and Map. Crown 8vo, cloth gilt, price 6*s*.

"Mr. Latouche's travels are delightfully written. . . . His book is as fair as it is pleasant; as full of information as it is sparkling with humour."—*Spectator*.

BEETON'S HOUSEHOLD AMUSEMENTS & ENJOYMENTS. Acting Charades, Burlesques, Conundrums, Enigmas, Rebuses, and Puzzles. With Coloured Frontispiece and many other Illustrations. Crown 8vo, cloth gilt, gilt edges, 5*s*.

THE HANDY BOOK OF GAMES FOR GENTLEMEN. By Captain CRAWLEY, Author of "The Billiard Book," the articles on Billiards and Bagatelle in "The Encyclopædia Britannica," "The Card-Player's Manual," &c. Billiards, Bagatelle, Whist, Loo, Cribbage, Chess, Draughts, Backgammon, Ecarté, Picquet, All Fours, &c., &c. Illustrated. Crown 8vo, cloth gilt, 5*s*.

Mrs. BEETON'S Book of HOUSEHOLD MANAGEMENT. IMPROVED AND ENLARGED EDITION. Comprising every kind of practical information on Domestic Economy and Modern Cookery. Containing 1,350 PAGES, 4,000 RECIPES AND INSTRUCTIONS, and 1,000 ENGRAVINGS and COLOURED PLATES. With accurate descriptions as to Quantities, Time, Costs, and Seasons of the various dishes, directions for Carving, Hints on the Management of Children, the Arrangement and Economy of the Kitchen, Duties of Servants, the Doctor, Legal Memoranda, and 250 Bills of Fare to suit the Seasons from January to December. Strongly bound, half-roan, price 7*s*. 6*d*.; cloth gilt, gilt edges, 8*s*. 6*d*.; half-calf, 10*s*. 6*d*.

*** *As a Wedding Gift, Birthday Book, or Presentation Volume at any period of the year, or upon any anniversary whatever, Mrs. Beeton's "Household Management" is entitled to the very first place. In half-calf binding, price half a guinea, the book will last a lifetime, and save money every day.*

WARD AND LOCK'S HOME BOOK. A Domestic Cyclopædia. Uniform with, and a Companion Volume to "Mrs. Beeton's Book of Household Management." Profusely Illustrated with Coloured and other Plates and about 600 Engravings in the text. Strongly bound, half-roan, price 7*s*. 6*d*.; half-calf, 10*s*. 6*d*.

Among the subjects treated of in WARD AND LOCK'S HOME BOOK will be found: The Way to Build, Buy, Rent, and Furnish a House—The Management of the Home—The Treatment of Children—Needlework in all its Branches—Home Dressmaking—The Toilet—Modern Etiquette—Employment of Leisure Hours, &c.

BEETON'S BOOK OF NEEDLEWORK. Consisting of 670 Needlework Patterns, with full Descriptions and Instructions as to working them. Every stitch described and engraved with the utmost accuracy, and the quantity of material requisite for each pattern stated. Handsomely bound, cloth gilt, gilt edges, price 7*s*. 6*d*.

*** *Just as* THE BOOK OF HOUSEHOLD MANAGEMENT *takes due precedence of every other Cookery Book, so this Collection of Needlework Designs has become the book,* par excellence, *for Ladies to consult, both for Instruction in Stitches and all kinds of work, and Patterns of elegant style and irreproachable good taste.*

London: WARD, LOCK & CO., Salisbury Square, E.C.

POETICAL WORKS.

WILLIAM WORDSWORTH'S WORKS.

The only Complete Editions.

The Complete Prose Works of William Wordsworth. Edited by Rev. ALEXANDER B. GROSART. In 3 Vols., demy 8vo, cloth, 21*s.*

*** *Dedicated, by express permission, to* HER MAJESTY, *and along with the Dedication a hitherto Unpublished Poem by* WORDSWORTH, *addressed to the* QUEEN *on sending a gift copy of his poems to the Royal Library, Windsor.*

WORDSWORTH'S POETICAL WORKS.

The Royal 8vo Edition, with Portrait. In One Vol., cloth gilt, 9*s.*

The Centenary Edition, with Notes and Portrait. Six Vols., fcap. 8vo, cloth, 30*s.*

The Pocket Edition. In 6 Pocket Vols., cloth, price 15*s.*

The Imperial 8vo Edition, with Steel Portrait and full-page Wood Engravings. In One Vol., cloth gilt, gilt edges, price 12*s.* 6*d.*

The Illustrated Edition, with Portrait, Etchings by EDWIN EDWARDS, Notes and Memoir by W. M. ROSSETTI. In One Vol., cloth gilt, gilt edges, price 21*s.*

Select Pieces from Wordsworth's Poems. In One Vol., cloth gilt, price 7*s.* 6*d.*

Wordsworth's Excursion. In One Vol., cloth gilt, price 3*s.* 6*d.*

SAMUEL TAYLOR COLERIDGE'S WORKS.

The only Authorised and Complete Editions.—REDUCED PRICES.

Coleridge's Poems. A New Edition. Crown 8vo, cloth, 3*s.* 6*d.*

Coleridge's Poems. Pocket Edition. Pott 8vo, cloth, 2*s.* 6*d.*

Coleridge's Dramatic Works. A New Edition. Fcap. 8vo, cloth, 3*s.* 6*d.*

Coleridge on the Constitution of Church and State. Fourth Edition. Fcap. 8vo, cloth, 2*s.* 6*d.*

Coleridge's Lay Sermons. Third Edition. Fcap. 8vo, cloth, 2*s.* 6*d.*

Coleridge's Friend. Fifth Edition. Two Vols., fcap. 8vo, cloth, 5*s.*

*** A complete Set of the above, price 21*s.*

SHELLEY'S POEMS, ESSAYS, AND LETTERS FROM ABROAD. Edited by Mrs. SHELLEY. With Portrait and Memoir. 8vo, cloth, price 12*s.*

SHELLEY'S POETICAL WORKS. With Portrait. Crown 8vo, cloth gilt, 5*s.*

POETICAL WORKS OF WM. MACKWORTH PRAED. With Portrait and Memoir by the Rev. DERWENT COLERIDGE, M.A. In Two Vols., cloth, price 10*s.* 6*d.*

THE POETICAL WORKS OF JOHN KEATS. With a Memoir by Lord HOUGHTON. In One Vol., crown 8vo, cloth gilt, 5*s.*

CHARLES LAMB'S ELIA AND ELIANA. With Portraits. In One Vol., fcap. 8vo, cloth, price 2*s.* 6*d.*

London: WARD, LOCK & CO., Salisbury Square, E.C.

ILLUSTRATED POETICAL WORKS.

"The power of English Literature is in its Poets."

MOXON'S POPULAR POETS.

New and Enlarged Editions, with Red Border Lines, Critical Memoirs by William Michael Rossetti, and Illustrations.

The press and the public, alike in Great Britain and her Colonies, and in the United States, unite in their testimony to the immense superiority of Messrs. Moxon's Popular Poets over any other similar collections published by any other house. Their possession of the Copyright works of Coleridge, Hood, Keats, Shelley, Wordsworth, and other great National Poets, places this series above rivalry.

1. **Byron's Poetical Works.**
2. **Longfellow's Poetical Works.**
3. **Wordsworth's Poetical Works.**
4. **Scott's Poetical Works.**
5. **Shelley's Poetical Works.**
6. **Moore's Poetical Works.**
7. **Hood's Poetical Works.**
8. **Keats' Poetical Works.**
9. **Coleridge's Poetical Works.**
10. **Burns' Poetical Works.**
11. **Tupper's Proverbial Philosophy.** The Four Series Complete in One Vol., with Portrait.
12. **Milton's Poetical Works.**
13. **Campbell's Poetical Works.**
14. **Pope's Poetical Works.**
15. **Cowper's Poetical Works.**
16. **Humorous Poems.**
17. **American Poems.**
18. **Mrs. Hemans' Poetical Works.**
19. **Thomson's Poetical Works.**
20. **Poetic Treasures.**
21. **Hood's Poetical Works.** Second Series.
22. **J. G. Whittier's Poetical Works.**
23. **J. R. Lowell's Poetical Works.**
24. **Young's Poetical Works.**
25. **Shakespeare's Complete Works.**
26. **Keble's Christian Year.**
27. **Poe's Poetical Works.**

With Red Border Lines, Critical Memoir, and Illustrations, handsomely bound, cloth gilt, gilt edges,

PRICE 3s. 6d. PER VOLUME.

Also to be had in the following varieties of binding—Morocco, 7*s.* 6*d.*; morocco extra, 8*s.*; tree calf, 10*s.* 6*d.*; relief leather, 12*s.*

MOXON'S FIVE SHILLING POETS.

Crown 8vo, cloth gilt, bevelled boards, gilt top, 5*s.*; half-morocco, 6*s.*

Hood's Serious Poems. With Preface by Thomas Hood the Younger, and numerous Illustrations.

Hood's Comic Poems. With Preface by Thomas Hood the Younger, and numerous Illustrations.

Shelley's Poetical Works. With Portrait.

Keats' Poetical Works. With a Memoir by Lord Houghton.

Longfellow's Poetical Works. With Memoir by William Michael Rossetti. Illustrated.

Scott's Poetical Works. With Memoir by William Michael Rossetti. Illustrated.

Hood's Poetical Works. 1st Series. With Memoir by William Michael Rossetti. Illustrated.

London: WARD, LOCK & CO., Salisbury Square, E.C.

THOMAS HOOD'S WORKS.

THE COMPLETE EDITION.

The Complete Works of Thomas Hood. In 10 Vols. Containing all the Writings of the Author of the "Song of the Shirt" ("Hood's Own," First and Second Series, included). With all the Original Cuts by CRUIKSHANK, LEECH, HOOD, &c. In 10 Vols., cloth, price 50*s.*; half-calf or half-morocco, price 70*s.*

COMPLETE EDITION OF HOOD'S POETICAL WORKS IN TWO VOLUMES.

1. **Hood's Serious Poems.** A New and Complete Edition, with a Preface by THOMAS HOOD the Younger, and full-page Illustrations. Handsomely bound, cloth gilt, gilt edges, 5*s.*

2. **Hood's Comic Poems.** A New and Complete Edition, with a Preface by THOMAS HOOD the Younger, and full-page Illustrations. Handsomely bound, crown 8vo, cloth gilt, gilt edges, 5*s.*

⁂ *These two volumes contain the entire Poems of the late* THOMAS HOOD, *which are now collected and issued Complete for the first time.*

Hood's Own; or, Laughter from Year to Year. First Series. Being former runnings of his Comic vein, with an effusion of new blood for general circulation. In One Vol. 8vo, Illustrated by 350 Woodcuts. Cloth gilt, gilt edges, 7*s.* 6*d.*

Hood's Own. Second Series. Being a further collection of his Wit and Humour. In One Vol., 8vo, Illustrated by about 540 Woodcuts. Cloth gilt, gilt edges, 7*s.* 6*d.*

Hood's Own; or, Laughter from Year to Year. First and Second Series in One Vol., Complete, with all the original Illustrations by CRUIKSHANK, LEECH, &c., numbering about 890. In handsome binding, royal 8vo, cloth gilt, 10*s.* 6*d.*

Hood's Whimsicalities. A Periodical Gathering; to which are added "York and Lancaster," "Lost and Found," "The Epping Hunt," and "Eugene Aram." With all the original Illustrations by the Author, JOHN LEECH, GEORGE CRUIKSHANK, and W. HARVEY. Crown 8vo, cloth gilt, price 5*s.*

Hood's Whims and Oddities, and Wit and Humour, in One Volume. With 87 Illustrations by the Author. Fcap. 8vo, cloth, price 6*s.*

Hood's Poems of Wit and Humour. Sixteenth Edition. Fcap. 8vo, cloth, price 3*s.* 6*d.*

Hood's Whims and Oddities, in Prose and Verse. With 87 Illustrations by the Author. Fcap. 8vo, cloth, price 3*s.* 6*d.* CHEAP EDITION, cloth gilt, 2*s.* 6*d.*; picture boards, 2*s.*

Hood's Wit and Humour. Fcap. 8vo, fancy wrapper, 1*s.*

Hood's Whims. Illustrated by the Author. Fcap. 8vo, fancy wrapper, 1*s.*

Hood's Oddities. Illustrated by the Author. Fcap. 8vo, fancy wrapper, 1*s.*

HANDSOME PRESENTATION VOLUMES.

SHAKESPEARE'S COMPLETE WORKS. With Life, Glossary, &c., and full-page and other Engravings. Handsomely bound, cloth gilt, price 6*s.*; bevelled boards, gilt edges, 7*s.* 6*d.*; half-morocco, 10*s.* 6*d.* Library Edition, cloth plain, 6*s.* Cheap Edition on thin paper, cloth gilt, 5*s.*; wrapper boards, 2*s.* 6*d.* *(See also "Moxon's Popular Poets" and "Ward and Lock's Standard Poets.")*

POETS AND PAINTERS; or, The Fields and the Woodlands. Consisting of Twenty-four Pictures, printed in Colours by Leighton Brothers. With Verses of character and beauty appropriate to the Pictures. Handsomely bound, cloth gilt, gilt edges, price 21*s.*

THE LAND OF THE BIBLE: Its Sacred Heroes and Wonderful Story. By John Tillotson. Amply Illustrated with Maps and more than 300 Wood Engravings. Handsomely bound, cloth gilt, gilt edges, price 7*s.* 6*d.*; half-calf, 10*s.* 6*d.*

The design of this work is to provide a Consecutive History of Palestine, from the time of Abraham to that of the final Destruction of Jerusalem under Titus. It also furnishes a Topographical Description of the Land.

BUNYAN'S PILGRIM'S PROGRESS, from this World to that which is to Come. With a Memoir of the Author by H. W. Dulcken, Ph.D., and 100 page and other Illustrations by Thomas Dalziel, engraved by the Brothers Dalziel. Presentation Edition, on thick toned paper, 4to, cloth gilt, gilt edges, price 10*s.* 6*d.*; crown 8vo, cloth gilt, gilt edges, 3*s.* 6*d.*; cloth gilt, 2*s.* 6*d.* Cheap Edition, wrapper, 1*s.*; cloth gilt, 1*s.* 6*d.*; gilt edges, 2*s.*

THE PRINCE OF THE HOUSE OF DAVID; or, Three Years in the Holy City. By Rev. J. H. Ingraham. With Coloured Plates and other Illustrations. Crown 8vo, cloth gilt extra, gilt edges, price 5*s.*; cloth gilt, gilt edges, Coloured Plates, 3*s.* 6*d.* Fcap. 8vo, cloth gilt, Coloured Frontispiece, 2*s.* 6*d.*; cloth gilt, gilt edges, 2*s.*; cloth gilt, 1*s.* 6*d.*; ornamental wrapper, 1*s.*

THE CHRISTIAN YEAR: Thoughts in Verse for the Sundays and Holy Days throughout the Year. By John Keble. Small fcap. 8vo, cloth gilt, plain edges, 1*s.*; cloth gilt, red burnished edges, 1*s.* 6*d.*; cloth gilt, bev. bds., gilt edges, 2*s.*; morocco, gilt edges, 5*s.* Crown 8vo, cloth gilt, plain edges, 2*s.* 6*d.* *(See also "Moxon's Popular Poets" and "Ward and Lock's Standard Poets.")*

THE LIFE AND WORK OF JESUS CHRIST. By Rev. F. A. Malleson, Editor of "Paley's Evidences," "Horæ Paulinæ," "Butler's Analogy," &c., in the "Christian Knowledge Series." With numerous Engravings. Crown 8vo, cloth gilt, 5*s.*

CRUDEN'S CONCORDANCE and BIBLE STUDENT'S HANDBOOK. Illustrated with 60 pages of Engravings. In One Handsome Vol., cloth gilt, 10*s.* 6*d.* Also to be had without Appendix or Illustrations, 7*s.* 6*d.*

Ward and Lock's *Edition is a* Genuine Unabridged Cruden, *and the most Complete that has ever been issued from the press. In addition to the Concordance, this Edition comprises* Sixty Pages of Wood Engravings, *and an* Appendix, *specially prepared for it, entitled* "The Bible Student's Handbook," *containing much Information calculated to be of service to the right reading and understanding of the divine word.*

JOSEPHUS (THE COMPLETE WORKS OF). A New Library Edition of William Whiston's Famous Translation. Containing "The Antiquities of the Jews," and "The Wars of the Jews." With Life of the Author and Appendix, Marginal Notes giving the Essence of the Narrative, and One Hundred Pages of Engravings. In One handsome Volume, royal 8vo, cloth gilt, 7*s.* 6*d.*; half-calf, 12*s.*

"The present edition is cheap and good, being clearly printed, and, as already remarked, serviceably embellished with views and object-drawings, not one of which is irrelevant to the matter."—*Daily Telegraph.*

London: WARD, LOCK & CO., Salisbury Square, E.C.

FAMILY BIBLES AND POPULAR COMMENTARIES.

THE ROYAL ANTIQUE EDITION of the HOLY BIBLE. With Marginal Notes and References, Bible Dictionary, Historical Connection between Old and New Testaments, Coloured Plates, Maps, Family Register, &c. Sumptuously bound in deep relief leather after the style of the Early Wood Carving. Price 105*s*.

The Centre Panel of the beautiful binding of this Edition of the Holy Bible represents Rubens' famous picture of "The Descent from the Cross," and at each corner there are Medallion Portraits of the four Evangelists. The design and blocks have been prepared at great expense of time and money.

THE ILLUSTRATED CHRISTIAN FAMILY BIBLE. With Marginal Notes and References, Complete Bible Dictionary, Historical Treatise connecting Old and New Testaments, 35 full-page Coloured Plates and Maps, Chronological Tables, Family Register, &c. Handsomely bound, morocco full gilt, or plain, 63*s*.; Persian, 52*s*. 6*d*.; French morocco, 42*s*.

The Notes to this New and Superb Bible will be found at once full, comprehensive, intelligible, and carefully selected, the References have been carefully revised by an eminent Clergyman, the Bible Dictionary has been thoroughly corrected and revised, and the Chronological Tables will be found accurate and reliable, having been also carefully revised.

COBBIN'S ILLUSTRATED FAMILY BIBLE AND PEOPLE'S COMMENTARY. With Family Register, many Coloured Plates, and over 1,000 Engravings. Cloth, red edges, 21*s*.; half-bound, red edges, 31*s*. 6*d*.; 2nd morocco, hard grained, 35*s*.; ditto, illuminated, 38*s*. 6*d*.; morocco, gilt edges, 42*s*.; Turkey morocco, 52*s*. 6*d*.

Trustworthy in explanations and attractive in form, "Cobbin's Family Bible" must be pronounced by far the Cheapest ever published. The Commentary, by one of our most eminent Biblical Scholars, will be found complete; and the Engravings, Plates, and Family Register unite to form a Bible suitable for all.

THE TEACHER'S PICTORIAL BIBLE AND BIBLE DICTIONARY. With many Engravings and Maps, and the most approved Marginal References, and Historical and Descriptive Illustrations, &c. Cloth gilt, 7*s*. 6*d*.; French morocco, 10*s*. 6*d*.; half-calf, 10*s*. 6*d*.; morocco, 15*s*.

A BEAUTIFUL EDITION OF THE HOLY BIBLE. With Illustrations selected from Raphael's Pictures in the Vatican, adapted by ROBERT DUDLEY, superbly printed in Tints, with Gold Borders, in the highest style of Art. Cloth gilt, gilt edges, 10*s*. 6*d*.; or magnificently bound in relievo leather, from a Design by OWEN JONES, 21*s*.; with rims and clasps, 31*s*. 6*d*.

COBBIN'S PORTABLE COMMENTARY. With 15,000 Notes, Critical and Illustrative, 50,000 References, Historical Treatise connecting the Old and New Testaments, various useful Tables, and Nine Coloured Maps. Cloth, gilt edges, 3*s*. 6*d*.; French morocco, blind, gilt edges, 5*s*.; French morocco, circuit, 6*s*. 6*d*.; pigskin, bevelled boards, blind, gilt edges, 6*s*. 6*d*.; French morocco, paste grain, 6*s*. 6*d*.; Turkey morocco extra, blind, gilt edges, 7*s*.; ditto, limp, blind, gilt edges, 7*s*.; ditto, limp circuit, gilt edges, 10*s*. 6*d*.; ditto, antique, red and gold edges, 9*s*.

THE ANALYTICAL BIBLE. With 50,000 References, Analytical Notes, Historical Connection of Old and New Testaments, various useful Tables, and Nine Coloured Maps. French morocco, 5*s*.; ditto, circuit, 6*s*. 6*d*.; pigskin, 6*s*. 6*d*.; Turkey morocco, 7*s*. 6*d*.; ditto, limp, 7*s*. 6*d*.; ditto, limp circuit, 10*s*. 6*d*.; ditto, antique bevelled, red and gold edges, 9*s*.; cloth, gilt edges, 3*s*. 6*d*.; French morocco, paste grain, 6*s*. 6*d*.

THE COMPANION BIBLE. With Authentic Notes on Oriental and Scriptural History, Scenery, and Customs, Engravings and Maps. Cloth antique, red edges, 7*s*. 6*d*.; French morocco, 10*s*. 6*d*.; pigskin, 14*s*.; Turkey morocco, 15*s*.; ditto, antique, 18*s*.

London: WARD, LOCK & CO., Salisbury Square, E.C.

STANDARD THEOLOGICAL WORKS.

WARD AND LOCK'S

CHRISTIAN KNOWLEDGE SERIES.

Price ONE SHILLING each; or neatly bound, cloth gilt, 1*s.* 6*d.*

Under the comprehensive title, "THE CHRISTIAN KNOWLEDGE SERIES," *is issued, in a series of well-printed volumes, published at a price which renders them accessible to all, the works of those great and good men who have devoted their lives and energies to promoting, in their writings, the highest interests of their fellow-creatures, by explaining and elucidating the various subjects connected with Religion and Christianity, and who have earned a title to the undying gratitude of posterity by engaging heart and soul in the great work, the object of which is "to justify the ways of God to man."*

Confident in the belief that to very large numbers these works will be thoroughly welcome and acceptable, the Editors and Publishers have undertaken the enterprise of indefinitely extending the range of the influence of these works, feeling assured of receiving the earnest co-operation and assistance of all good men in diffusing, by means of these good and cheap editions of excellent books, true Christian Knowledge.

1. **Paley's Evidences of Christianity.** With Life, Introduction, Analysis, and Notes.
2. **Butler's Analogy of Religion to the Constitution and** Course of Nature. With Life, Introduction, Notes, &c.
3. **Taylor's Holy Living.** With Life, Introduction, and Notes.
4. **Taylor's Holy Dying.** With Introduction, Notes, &c.
5. **Doddridge's Rise and Progress of Religion in the Soul.** With Life, Introduction, and Notes.
6. **Paley's Natural Theology.** With Introduction, Epitome, and Notes.
7. **Keith on Prophecy.** (*By special arrangement with the Author.*)
8. **Bunyan's Pilgrim's Progress.** With Memoir of the Author by H. W. DULCKEN, Ph.D., and 100 Illustrations.
9. **Paley's Horæ Paulinæ.** With Introduction, Epitome, and Notes.

Hand and Heart says:—"The publishers well deserve the thanks of the community for this noble effort. They are most effectively doing the work of a 'Christian Knowledge Society,' without any appeal for charitable funds. As a self-sustaining agency for the circulation of first-class theological works we gladly commend this 'Christian Knowledge Series' to the notice of all our readers."

Lloyd's Newspaper says:—"We can assure our readers that the get-up of the two volumes on our table is excellent, and, at the price, wonderful. The notes are short, and what is still more noticeable, generally to the point. The epitome of both volumes is excellently conceived, and is calculated to impress the book deeply on the reader's mind."

The Weekly Times:—"Every young man or young woman, every one who aspires to independent thought, should be students of, and possessors of, these books."

☞ ***The Publishers have been favoured with letters from some of the highest dignitaries of the Church of England, and the principal Clergymen of every Denomination, all speaking in the highest terms of the*** CHRISTIAN KNOWLEDGE SERIES.

London: WARD, LOCK & CO., Salisbury Square, E.C.

USEFUL AND INSTRUCTIVE BOOKS.

KIRTON'S STANDARD RECITERS.

Containing over One Thousand Choice Selections of Prose and Poetical Recitations, Readings, and Dialogues.

Edited by J. W. KIRTON, LL.D., Author of "Buy Your Own Cherries."

Boards, price 1s. each; cloth gilt, 1s. 6d. each.

1. **Kirton's Standard Temperance Reciter.**
2. **Kirton's Standard Sunday School Reciter.**
3. **Kirton's Standard Popular Reciter.**
4. **Kirton's Standard Comic Reciter.**
5. **Kirton's Standard Speaker and Elocutionist.**
6. **Kirton's Standard Band of Hope Reciter.**

Fcap. 8vo, cloth gilt, price 3s. 6d. each.

KIRTON'S ELOCUTIONIST AND PUBLIC SPEAKER. A Popular and Comprehensive Guide to the Art of Reading and Elocution. Illustrated by choice Prose and Poetical Pieces. Suitable for Home, School, and Public use.

KIRTON'S SOCIAL AND RELIGIOUS RECITER. A Collection of Dialogues, Recitations, and Readings in Prose and Poetry, suitable for Temperance, Band of Hope, and Sunday School Meetings.

ODD OR EVEN. A New Copyright Novel by Mrs. WHITNEY, Author of "The Gayworthys," &c. In Two Vols., cloth, price 10s. 6d.

A DAY OF FATE. A New Copyright Novel by Rev. E. P. ROE, Author of "From Jest to Earnest," &c. In Two Vols., cloth, price 10s. 6d.

REEDYFORD; or, Creed and Character. By Rev. SILAS K. HOCKING, Author of "Her Benny," "Alec Green," &c. With full-page Engravings. Crown 8vo, cloth gilt, gilt edges, 3s. 6d.

MOODY'S TALKS ON TEMPERANCE. By D. L. MOODY. Edited by J. W. KIRTON, LL.D., Author of "Buy your Own Cherries." In wrapper, price 1s.; cloth gilt, 1s. 6d.

INTOXICATING DRINKS: Their History and Mystery. By J. W. KIRTON, LL.D. Boards, price 1s.; cloth gilt, 1s. 6d.

BEETON'S PUBLIC SPEAKER. A Collection of the Remarkable Speeches of the World's Greatest Orators. Cloth gilt, 3s. 6d.

COOK'S BOSTON MONDAY LECTURES.

By Rev. JOSEPH COOK, of Boston, U.S.A.

Crown 8vo, neat cloth, price 1s. each.

1. **Biology and Transcendentalism.**
2. **God and the Conscience, and Love and Marriage.**
3. **Scepticism and Rationalism, &c.**
4. **Certainties of Religion and Speculations of Science.**

The present edition has been carefully prepared with the intention of offering these remarkable lectures to the public in the CHEAPEST AND MOST AVAILABLE FORM, *and it is believed that the special advantages offered, and presented by no other edition, will be appreciated. Prospectus post free on application.*

London: WARD, LOCK & CO., Salisbury Square, E.C.

FOR HOME READING.

THE HOME TREASURE LIBRARY.

Handsomely bound, cloth gilt, gilt edges, price 3s. 6d. each.

It is the intention of the Publishers that a tone of pure morality and lofty aim shall characterise the whole of the volumes in this Library, while at the same time the type, paper, and binding shall be of the best description; this, added to the Illustrations, will render these books, both as to interior and exterior, everything that could be desired, and worthy of a place in the Library of every Home.

1. Shiloh. By Mrs. W. M. L. Jay. With Coloured Illustrations.
2. The Prince of the House of David. Coloured Illustrations.
3. Miss Edgeworth's Moral Tales. With Coloured Illustrations.
4. Miss Edgeworth's Popular Tales. Coloured Illustrations.
5. The Throne of David. By Rev. J. H. Ingraham. Illustrated.
6. The Pillar of Fire. By Rev. J. H. Ingraham. Illustrated.
7. Anna Lee. By T. S. Arthur. Illustrated.
8. The Wide, Wide World. By E. Wetherell. Coloured Illusts.
9. Queechy. By the same. With Coloured Illustrations.
10. Melbourne House. By the same. Coloured Illustrations.
11. Sceptres and Crowns, and The Flag of Truce. By the same. With Coloured Illustrations.
12. The Fairchild Family. By Mrs. Sherwood. Coloured Illusts.
13. Stepping Heavenward, and Aunt Jane's Hero. By Mrs. E. Prentiss. With Coloured Illustrations.
14. Mabel Vaughan. By Miss Cumming. Coloured Illustrations.
15. Dunallan. By Grace Kennedy. Coloured Illustrations.
16. Father Clement. By the same. With Coloured Illustrations.
17. Holden with the Cords. By Mrs. Jay. Coloured Illustrations.
18. Uncle Tom's Cabin. By Mrs. H. B. Stowe. With a Sketch of the Life of Rev. Josiah Henson. Coloured and other Illustrations.
19. Barriers Burned Away. By E. P. Roe. Coloured Illustrations.
20. Little Women and Good Wives. By Miss Alcott. With Coloured Illustrations.
21. From Jest to Earnest. By E. P. Roe. Coloured Illustrations.
22. Near to Nature's Heart. By E. P. Roe. Coloured Illustrations.
23. Opening of a Chestnut Burr. By E. P. Roe. Col. Illust.
24. What Can She Do? By E. P. Roe. Coloured Illustrations.
25. The Old Helmet. By E. Wetherell. Coloured Illustrations.
26. Daisy. By the same. With Coloured Illustrations.
27. A Knight of the Nineteenth Century. Coloured Illustrations.
28. Woman our Angel. By A. S. Roe. Coloured Illustrations.
29. The Lamplighter. By Miss Cumming. Coloured Illustrations.
30. A Face Illumined. By E. P. Roe. Coloured Illustrations.
31. The Story of Stories. By Mrs. Leathley. Illustrated.

London: WARD, LOCK & CO., Salisbury Square, E.C.

ILLUSTRATED GIFT BOOKS.

THE GOOD WORTH LIBRARY.

In the Good Worth Library *no works have been admitted in which the three requisites for good worth in a book,—namely, the promotion of knowledge, the furtherance of wisdom, and the charm of amusement—are not combined, and whose perusal will not satisfy the mind, as with good, wholesome and strengthening food.*

Fully Illustrated and handsomely bound, cloth gilt, 3*s.* 6*d.* each.

1. **Bunyan's Pilgrim's Progress,** from this World to that which is to Come. With Memoir of the Author by H. W. Dulcken, Ph.D., and 100 Illustrations by Thomas Dalziel, Engraved by Dalziel Brothers.
2. **The Swiss Family Robinson;** or, The Adventures of a Swiss Pastor and his Family on an Uninhabited Island. Translated by Henry Frith. With Coloured Plates and upwards of 200 Engravings.
3. **Andersen's Stories for the Young.** By Hans Christian Andersen. With many full-page and other Engravings.
4. **Andersen's Popular Tales for Children.** By Hans Christian Andersen. With many full-page and other Engravings.
5. **Anne and Jane Taylor's Poetry for Children.** Containing the Original Poems, Hymns for Infant Minds, and Rhymes for the Nursery. With many Engravings.
7. **Fifty Celebrated Women:** Their Virtues and Failings, and the Lessons of their Lives. With many Engravings.
8. **Fifty Celebrated Men:** Their Lives and Trials, and the Deeds that made them Famous. With many Engravings.
9. **Robinson Crusoe.** By Daniel Defoe. With Memoir of the Author and many Engravings.
10. **The Wonders of the World,** in Earth, Sea, and Sky. By Uncle John. With 123 Engravings.
11. **Evenings at Home;** or, The Juvenile Budget Opened. By Mrs. Barbauld and Dr. Aiken. With many Engravings.
12. **The Gentlemen Adventurers;** or, Antony Waymouth. By W. H. G. Kingston. With full-page Engravings.
13. **Sandford and Merton** (The History of). By Thomas Day. With 100 Engravings by Dalziel Brothers.
14. **The Boy's Own Sea Stories.** Being the Adventures of a Sailor in the Navy, the Merchant Service, and on a Whaling Cruise. Told by Himself. With full-page Engravings.
16. **Great Inventors:** The Sources of their Usefulness, and the Results of their Efforts. With 109 Engravings.
17. **The Marvels of Nature;** or, Outlines of Creation. With 400 Engravings by Dalziel Brothers.
18. **The Boy's Own Book of Manufactures and Industries of the World.** With 365 Engravings by Dalziel Brothers.

London: WARD, LOCK & CO., Salisbury Square, E.C.

THE GOOD WORTH LIBRARY—*continued.*

19. **Famous Boys, and How they Became Famous Men.** With many Engravings.
20. **Triumphs of Perseverance and Enterprise.** By THOMAS COOPER. With many Engravings.
21. **The Crusades and Crusaders.** The Story of the Struggle for the Holy Sepulchre. By J. G. EDGAR. With full-page Engravings.
22. **The Merchant's Clerk; or, Mark Wilton.** By Rev. C. B. TAYLER, M.A. With full-page and other Engravings.
23. **The Young Marooners; or, The Adventures of Robert and** Harold on the Florida Coast. With many Engravings.
24. **Holiday House.** By CATHERINE SINCLAIR. With full-page Engravings.
25. **The Boy's Book of Modern Travel and Adventure.** With many Engravings.
26. **Mary Bunyan, the Blind Daughter of John Bunyan.** By SALLIE ROCHESTER FORD. With full-page Engravings.
27. **The Scottish Chiefs.** By JANE PORTER. With full-page Engravings.
30. **Life Thoughts.** Gathered from the Extemporaneous Discourses of HENRY WARD BEECHER. With Red Border Lines.
31. **The Christian Life.** Bible Helps and Counsels for Every Day throughout the Year. With Red Border Lines.
32. **The Perfect Life.** By WILLIAM E. CHANNING.
33. **Sacred Heroes and Martyrs.** By J. T. HEADLEY. Revised and Edited by J. W. KIRTON, LL.D., Author of "Buy your Own Cherries."
34. **Religion and Science; or, The Truth Revealed in Nature and** Scripture. By JOSEPH LE CONTE.
35. **Getting On in the World; or, Hints on Success in Life.** By WILLIAM MATHEWS, LL.D.
36. **Household Stories.** By the Brothers GRIMM, W. HAUFF, &c. With numerous Engravings.

CHILDREN AT JERUSALEM: A Sketch of Modern Life in Syria. By Mrs. HOLMAN HUNT. Elegantly bound, cloth gilt, coloured edges, price 3*s.* 6*d.*

LITERARY CURIOSITIES AND ECCENTRICITIES. Collected and Edited by W. A. CLOUSTON. A Book of Anecdotes, Laconic Sayings, and Gems of Thought in Prose and Poetry. Crown 8vo, cloth gilt, 2*s.* 6*d.*

THE TRUE HISTORY OF A LITTLE RAGAMUFFIN. By JAMES GREENWOOD, Author of "Journeys through London," "A Night in a Workhouse," "Silas the Conjuror," &c. With full-page Illustrations. Crown 8vo, cloth gilt, price 3*s.* 6*d.*

ILLUSTRATED BOOKS.

THE FAMILY CIRCLE LIBRARY.

A Series of Popular Books, specially designed for Gifts and Rewards, and for Family Reading and Reference.

Fully Illustrated and handsomely bound, cloth gilt, 3s. 6d. each.

1. **Margaret Catchpole (The History of).** By Rev. R. COBBOLD. With Coloured Plates and other Illustrations.
2. **Beatrice; or, The Unknown Relatives.** By CATHERINE SINCLAIR. With Coloured Plates.
3. **Amy and Hester; or, The Long Holidays.** By H. A. FORD. With Coloured Frontispiece and many Engravings.
4. **Wonders and Beauties of the Year.** Popular and Poetical Descriptions of the Wild Flowers, Birds, and Insects of the Months. By H. G. ADAMS. With Coloured Frontispiece and many Engravings.
5. **Wonders and Curiosities of Animal Life.** By GEORGE KEARLEY. With Coloured Frontispiece and many Engravings.
6. **Nature's Gifts, and How we Use them.** A Familiar Account of our Everyday Wants, Comforts, and Luxuries. By GEORGE DODD. With Coloured Frontispiece and other Illustrations.
7. **Modern Society; or, The March of Intellect.** By CATHERINE SINCLAIR. With Coloured and other Illustrations.
8. **Herbert Lovell; or, Handsome He who Handsome Does.** By Rev. F. W. B. BOUVERIE. With Coloured and other Illustrations.
9. **The Sailor Hero; or, The Frigate and the Lugger.** By Captain ARMSTRONG, Author of "The Cruise of the *Daring*." With full-page Illustrations.
10. **The Cruise of the "Daring."** A Tale of the Sea. By Capt. ARMSTRONG, Author of "The Sailor Hero." With full-page Illustrations.
11. **Life's Contrasts; or, The Four Homes.** By Mrs. GOTHER MANN. With Coloured Frontispiece and other Illustrations.
12. **Popular Preachers of the Ancient Church:** Their Lives and their Works. By Rev. W. WILSON. With Illustrations.
13. **Edwin and Mary; or, The Mother's Cabinet.** With Coloured Frontispiece and other Illustrations.
14. **The Book of Children's Hymns and Rhymes.** With Coloured Frontispiece and many Engravings.
15. **Looking Heavenward:** A Series of Tales and Sketches for the Young. By JANE C. SIMPSON. With Coloured Frontispiece and many Engravings.
16. **Character and Culture.** By the BISHOP of DURHAM, Canon DALE, &c. With Passages selected from the Works of Eminent Divines.
17. **Pilgrims Heavenward.** Essays of Counsel and Encouragement for the Christian Life. With Coloured Frontispiece.

London: WARD, LOCK & CO., Salisbury Square, E.C.

FOR EVERY HOME.

THE FAMILY CIRCLE LIBRARY—*continued.*

18. **Preachers and Preaching, in Ancient and Modern Times.** By the Rev. HENRY CHRISTMAS. With Portraits.

19. **Julamerk; or, The Converted Jewess.** By Mrs. WEBB. With Coloured and other Illustrations.

20. **Fern Leaves from Fanny's Portfolio.** First and Second Series Complete. With numerous Illustrations.

21. **Orange Blossoms: A Book for All who have Worn, are Wearing, or are likely to Wear Them.** Edited by T. S. ARTHUR. With numerous Illustrations.

22. **The Martyrs of Carthage; or, The Christian Converts.** A Tale of the Times of Old. With numerous Illustrations.

23. **Modern Accomplishments; or, The March of Intellect.** By CATHERINE SINCLAIR, Author of "Beatrice," "Modern Society," &c. With Coloured Plates.

26. **Poe's Tales of Mystery, Imagination, and Humour.** By EDGAR ALLAN POE. With numerous Illustrations.

27. **Ballads and Poetical Tales.** Selected from PERCY, RITSON, EVANS, JAMIESON, SCOTT, &c.

28. **Beeton's Book of Birds; Showing how to Rear and Manage them in Sickness and in Health.** With Coloured Plates by HARRISON WEIR, and over 100 Engravings.

29. **Beeton's Book of Poultry and Domestic Animals: How to Rear and Manage them in Sickness and in Health.** With Coloured Plates by HARRISON WEIR, and over 100 Engravings.

31. **Journeys through London; or, Bye-ways of the Modern Babylon.** By JAMES GREENWOOD, Author of "A Night in a Workhouse," &c. With 12 double-page Engravings.

32. **Fanny Fern's New Stories for Children.** By the Author of "*Fern Leaves.*" Illustrated.

33. **Adventures of Captain Hatteras.** Containing "The English at the North Pole," and "The Ice Desert." By JULES VERNE. With Coloured Plates.

34. **Twenty Thousand Leagues Under the Sea.** First and Second Series Complete. By JULES VERNE. With Coloured Plates.

35. **The Wonderful Travels.** Containing "Journey into the Interior of the Earth," and "Five Weeks in a Balloon. By JULES VERNE. With Coloured Plates.

36. **The Moon Voyage.** Containing "From the Earth to the Moon," and "Round the Moon." By JULES VERNE. With Coloured Plates.

37. **The Boy's Handy Book of Games and Sports.** With Hundreds of Illustrations.

38. **The Boy's Handy Book of Natural History.** With about 200 full-page Engravings by W. HARVEY.

London: WARD, LOCK & CO., Salisbury Square, E.C.

PURE LITERATURE BY CHOICE AUTHORS.

THE GOOD TONE LIBRARY.

The volumes included under this head are those really High-class Works which are most calculated to elevate the mind and give a high tone to the character. Containing all the interest of a novel without the objectionable features so frequently attaching to that class of literature, these Works, designed for the perusal of the Youth of Both Sexes, will be warmly welcomed. The names of the Authors are in themselves sufficient evidence of careful selection, and will assure the public that good taste and purity of spirit constitute the leading features of the "GOOD TONE LIBRARY."

Post 8vo, elegantly bound, cloth gilt, price 2s. 6d.

1. **The Prince of the House of David.** By Rev. J. H. INGRAHAM. With Coloured Frontispiece.
2. **The Wide, Wide World.** By ELIZABETH WETHERELL. With Coloured Frontispiece.
3. **Queechy.** By ELIZABETH WETHERELL. With Coloured Frontispiece.
4. **Melbourne House.** By ELIZABETH WETHERELL. With Coloured Frontispiece.
5. **Uncle Tom's Cabin.** By Mrs. H. B. STOWE. With Sketch of the Life of Rev. JOSIAH HENSON. Coloured and other Illustrations.
6. **Stepping Heavenward.** By E. PRENTISS. With Coloured Frontispiece.
7. **History of the Fairchild Family.** By Mrs. SHERWOOD. With Coloured Frontispiece.
8. **Anna Lee: the Maiden, the Wife, and the Mother.** By T. S. ARTHUR. With Illustrations.
9. **Flower of the Family.** By E. PRENTISS. With Coloured Frontispiece.
10. **From Jest to Earnest.** By E. P. ROE. With Coloured Frontispiece.
11. **The Throne of David.** By Rev. J. H. INGRAHAM. Illustrated.
12. **The Pillar of Fire.** By Rev. J. H. INGRAHAM. Illustrated.
13. **Shiloh; or, Without and Within.** By Mrs. W. M. L. JAY. With Coloured Frontispiece.
14. **Holiday House.** By CATHERINE SINCLAIR. With Coloured Frontispiece.
15. **Little Women.** By LOUISA M. ALCOTT. With Coloured Frontispiece.
16. **Good Wives.** Sequel to, and by the Author of, "Little Women." With Coloured Frontispiece.
17. **The Lamplighter.** By Miss CUMMING. With Coloured Frontispiece.
18. **The Old Helmet.** By the Author of "Queechy," &c. With Coloured Frontispiece.
19. **Freston Tower.** By Rev. R. COBBOLD, Author of "Margaret Catchpole," &c. Illustrated.

London: WARD, LOCK & CO., Salisbury Square, E.C.

POPULAR NOVELS, &c.

HOUSEHOLD AND RAILWAY BOOKS.

In picture boards, price 2*s*. each.

1. **Eulalie; or, The Red and** White Roses. By W. Stephens Hayward.
2. **The Young Dragoon.** By Captain Drayson. Illustrated.
3. **The Image of His Father.** By the Brothers Mayhew. Illustrated by "Phiz."
4. **The Innocents Abroad** and the New Pilgrim's Progress. By Mark Twain.
5. **Bret Harte's Complete** Tales.
6. **Out of the Hurly Burly;** or, Life in an Odd Corner. By Max Adeler, Author of "Elbow Room," &c With 400 Humorous Illustrations by A. B. Frost.
7. **Twelve Months of Matrimony.** By Emilie Carlen.
8. **The Phantom Cruiser.** By Lieutenant Warneford.
9. **The Brilliant Marriage.** By Emilie Carlen.
10. **Mark's Reef.** By J. Fenimore Cooper.
11. **The Heir at Law.** By "Waters"
12. **Running the Blockade.** By Lieutenant Warneford.
13. **The Sea Lions.** By J. Fenimore Cooper.
14. **Nights at Sea; or, Naval** Life during the War.
15. **Mary Bunyan, the Dreamer's** Blind Daughter. By Sallie Rochester Ford.
16. **Back Log Studies, and** My Summer in a Garden By Charles Dudley Warner.
17. **Mark Twain's American** Drolleries.
18. **Funny Stories and Humorous** Poems. By Mark Twain and O. W Holmes
19. **Beeton's Book of Riddles** and Acting Charades. Illustrated.
20. **Artemus Ward, His Book,** and Travels among the Mormons.
21. **Josh Billings and Major** Jack Downing.
22. **Biglow Papers and Saxe's** Poems. By J. R. Lowell and J. G. Saxe.
23. **Artemus Ward's Letters** to *Punch*, and Mark Twain's Practical Jokes.
24. **The Heathen Chinee and** Sensation Novels. Bret Harte.
25. **The Diamond Cross, and** How I Won It By W. Stephens Hayward, Author of "Eulalie."
26. **Poe's Poetical Works.**
27. **The Redskins; or, The** Wigwam in the Wilderness. By Captain Flack.
28. **Mont Blanc.** By Albert Smith, with a Memoir of the Author by Edmund Yates.
29. **The Diamond Necklace:** Confessions of the Countess De la Motte.
30. **The Castaways of the** Prairie. By Captain Flack.
31. **Impudent Impostors and** Celebrated Claimants.
32. **Elbow Room: A Novel without** a Plot. By Max Adeler. Profusely and Humorously Illustrated by A B Frost.
33. **Wine and Walnuts. A** Book of Literary Curiosities.
36. **The Card Player's Manual.** By Captain Crawley, Author of "The Billiard Book."
37. **Helen's Babies, and Other** People's Children. Illustrated.
38. **Little Miss Mischief.** By Susan Coolidge Illustrated
39. **Grown - up Babies and** Other People. By Author of "Helen's Babies." Illustrated.
40. **Random Shots.** By Max Adeler, Author of "Out of the Hurly Burly," &c. Humorously Illustrated by A. B Frost
41. **The Man of the World.** By S. W Fullom.
42. **An Old Fogey.** By Max Adeler, Author of "Out of the Hurly Burly," &c. Humorously Illustrated.

London: WARD, LOCK & CO., Salisbury Square, E.C.

POPULAR BOOKS OF HUMOUR.

WARD AND LOCK'S

HUMOROUS BOOKS.

In picture wrapper, price 1s each.

2. Artemus Ward: His Book.
3. Beeton's Riddle Book.
4. Beeton's Burlesques.
5. Beeton's Book of Charades.
6. The Biglow Papers.
7. Saxe's Poems.
8. Joe Miller's Jest Book.
9. Connubial Bliss.
16. Pusley. By C. D. WARNER.
17. Back-Log Studies. Ditto.
18. Sandy Bar. BRET HARTE.
19. Roaring Camp. Ditto.
20. The Heathen Chinee. Do.
21. Hood's Wit and Humour.
22. Whims. By THOMAS HOOD.
23. Oddities. Ditto.
24. Innocents Abroad. TWAIN.
25. The New Pilgrim's Progress By MARK TWAIN
26. Jerrold's Jokes and Wit.
29. Jumping Frog. M. TWAIN.
30. Letters to Punch. By ARTEMUS WARD.
31. Artemus Ward among the Mormons
32. Naughty Jemima. Illust.
33. Eye Openers. M. TWAIN.
34 Practical Jokes. Ditto.
35. Screamers. Ditto.
36. Awful Crammers.
37. Babies and Ladders, by EMANUEL KINK, and Artemus Ward among the Fenians
38. Holmes' Wit and Humour.
39. Josh Billings: His Sayings.
40. The Danbury Newsman.
41. The Mystery of Mr. E. Drood By ORPHEUS C. KERR.
42. Shaving Them.
43. Mr. Brown on the Goings-on of Mrs. Brown.
44. Sensation Novels. By BRET HARTE.
46 Mr. Sprouts: His Opinions.
48. The Ramsbottom Papers.
49. Major Jack Downing.
50. The Pagan Child, and other Sketches. By BRET HARTE.
51. Helen's Babies. By JOHN HABBERTON. Illustrated.
52. The Barton Experiment. By Author of "Helen's Babies."
53. The Mississippi Pilot. By MARK TWAIN
54. The Jericho Road. By the Author of "Helen's Babies"
55 Some Other Babies, very like Helen's, only more so.
56. The Story of a Honeymoon. By C. H. ROSS. Illust.
58. Hans Breitmann's Ballads.
59. Other People's Children. Sequel to, and by the Author of "Helen's Babies" Illustrated.
60. Cent. per Cent. B. JERROLD.
61. That Husband of Mine.
62. Two Men of Sandy Bar. By BRET HARTE
63. Grown-up Babies. Author of "Helen's Babies." Illustrated.
64. Other People. Ditto.
65. Folks in Danbury.
66. My Wife's Relations.
67. My Mother-in-Law.
68. Babbleton's Baby.
69. The Scripture Club of Valley Rest. JOHN HABBERTON.
70. That Girl of Mine.
71. Bessie's Six Lovers.
72. Mark Twain's Nightmare. Tales and Poetry by MARK TWAIN F. C. BURNAND H. S. LEIGH, &c., and Illustrations by L. SAMBOURNE, A. B. FROST, &c.
73. Bret Harte's Hoodlum Band, and other Stories.
74. Bret Harte's Deadwood Mystery. Tales and Sketches by F. C. BURNAND and others. Illustrate by JOHN PROCTOR, &c.
75. The Tradesmen's Club. Tales, Sketches, and Rhymes by Popular Authors. Illustrated by MATT. STRETCH and others.

London: WARD, LOCK & CO., Salisbury Square, E.C.

GOLD MEDAL, PARIS
12th INTERNATIONAL MEDAL AWARDED.
First Award for Chocolate and Cocoa at the Sidney Exhibition.

FRY'S COCOA.

FRY'S COCOA EXTRACT
GUARANTEED PURE COCOA ONLY.

A perfectly Pure and Delicious Beverage, prepared exclusively from Choice Cocoa Nibs (deprived of the superfluous oil).

"If properly prepared, there is no nicer or more wholesome preparation of Cocoa."—*Food, Water, and Air,* DR. HASSALL.

"Strictly pure, and well manufactured in every way."—W. W. STODDART, F.I.C., F.C.S., *City and County Analyst, Bristol.*

"Pure Cocoa, from which a portion of its oily ingredients has been extracted." CHAS. A. CAMERON, M.D., F.R.C.S.I., *Analyst for Dublin.*

J. S. FRY & SONS, BRISTOL and LONDON.

BEETON'S
SHILLING LEGAL HANDBOOKS.

Now Ready, in strong linen covers, price 1s. each.

1. Property.
2. Women, Children, and Registration.
3. Divorce and Matrimonial Causes.
4. Wills, Executors, and Trustees.
5. Transactions in Trade, Securities, and Sureties.
6. Partnership and Joint-Stock Companies.
7. Landlord and Tenant, Lodgers, Rates and Taxes.
8. Masters, Apprentices, Servants, and Working Contracts.
9. Auctions, Valuations, Agency, Games and Wages.
10. Compositions, Liquidatons, and Bankruptcy.
11. Conveyance, Travellers, and Innkeepers.
12. Powers, Agreements, Deeds, and Arbitrations.
13. The County Court.

London: WARD, LOCK & Co., Salisbury Square, E.C.